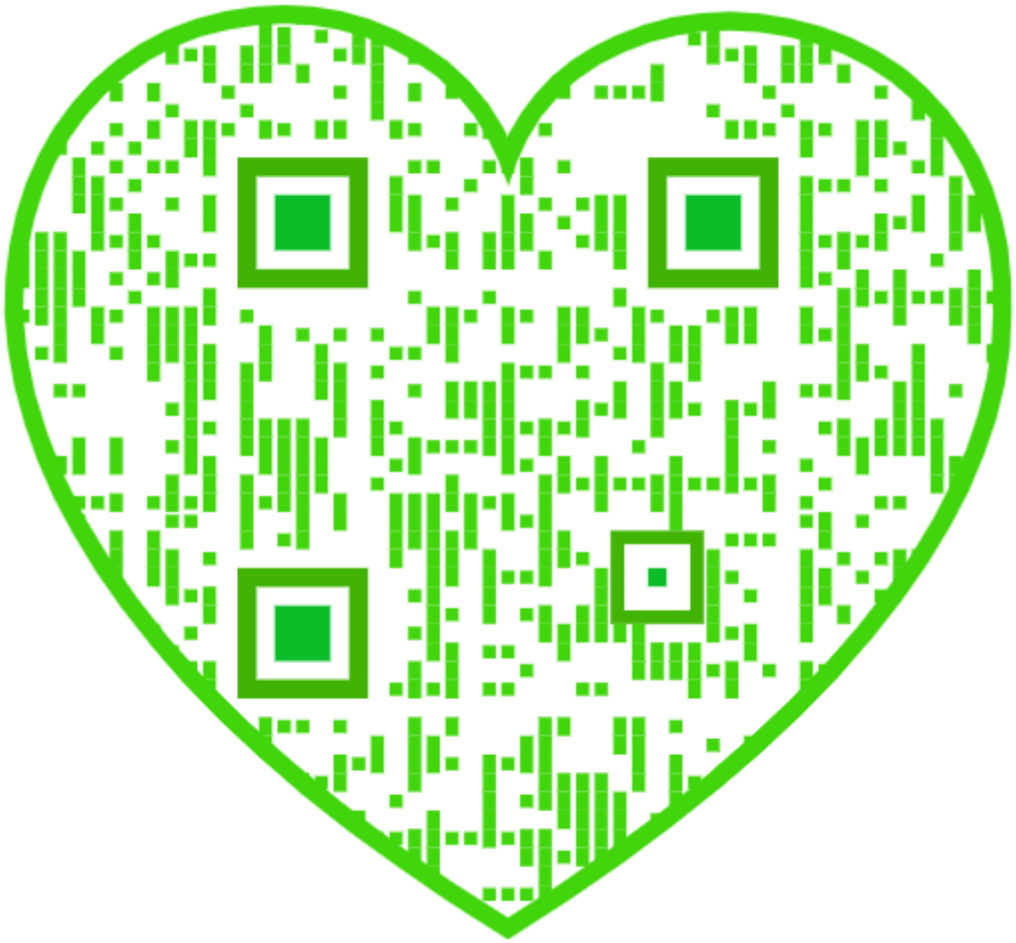

THE

ARCHITECT & ENGINEER

OF

CALIFORNIA

·PACIFIC·COAST·STATES·

NOVEMBER
1910

·ILLUSTRATIVE·
·OF·THE·WORK·
OF
·REID·BROS·
·ARCHITECTS·

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Issued monthly in the interests of Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast

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JAMES W. REID

MERRITT J. REID

Frontispiece
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November, 1910

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THE

Architect and Engineer

Of California

Pacific Coast States

VOL. XXIII. NOVEMBER, 1910. No. 1.

Hotel del Coronado
Reid Bros., Architects

The Work of Reid Bros., Architects

THE comprehensive and varied types of buildings designed by Messrs. Reid Bros. and illustrated in this number of the Architect and Engineer are to a considerable extent typical of the development of architecture in San Francisco. Certainly none in their profession have done more to attract the attention of the outside world to this city by meritorious examples in architecture and engineering.

Following closely upon their first work on the Pacific Coast, the Hotel del Coronado—famed more on account of its unique position, adaptability to its surroundings and magnitude, than for any constructive or engineering feat—we find the first steel frame west of Chicago represented in the Portland Oregonian. A few years later they presented the first successful solution of a modern skyscraper, as illustrated in the Claus Spreckels, popularly known as the Call building. Running through all the various commercial, public and monumental, hotel, theatrical, church and residential work here presented, we find the same careful attention has been given to the essential requirements of the profession. These may be summed up briefly as—correct design adapted to the particular requirements of each case—safe and secure construction with a minimum of cost and a maximum of

Claus Spreckels Building, San Francisco
Reid Bros., Architects

available space, light and air, together with convenience of arrangement and artistic effect.

In its particular line, the Claus Spreckels or Call building has commanded more than the usual attention, not only on account of its location within the earthquake zone, but from its wonderful adaptation to requirements and beauty of design for a tall commercial building. It was in fact the highest building, as compared with ground area, attempted at the time of its erection, and still remains the best example of proportions and correct architectural treatment.

Robert M. Turner

Regarding its construction, the following extracts are illustrative of expert opinion as expressed in the Government Geological Survey of the San Francisco earthquake and fire, issued by the Department of the Interior:

"Of all the commercial buildings in San Francisco, by far the most interesting was that known as the Call (or Spreckels) building at the corner of Third and Market streets. This building is remarkable for the care and skill shown in the design of its steel work. . . .

"In the first four stories above the street the bents of the steel work adjacent to the four corners of the building on each side were braced with solid portal braces. In addition, eight interior bents were braced with diagonal tiebars from top to bottom. At all junctions of girders and beams with columns, knee braces were used. The design of this steel work is well worthy of study by anyone interested in such structures. It is probably, on the whole, the best designed piece of such work in the United States. Another remarkable thing about it is that the execution was apparently as good as the design. . . .

"On the exterior, the Call building showed absolutely no damage from the earthquake, except in the story immediately above the main cornice, where, in the parts adjacent to the four corners, a few stones had evidently slipped so that the joints had opened up for possibly half an inch or more. . . .

"The only safe plan in the construction of steel-frame buildings is the one followed in the Call building—that is, to brace the steel work so that by itself it is able to resist the stresses due to the vibration. The engineer who designed the foundations and steel frame of this building may well be gratified at the admirable manner in which his structure fulfilled its purpose. . . ."

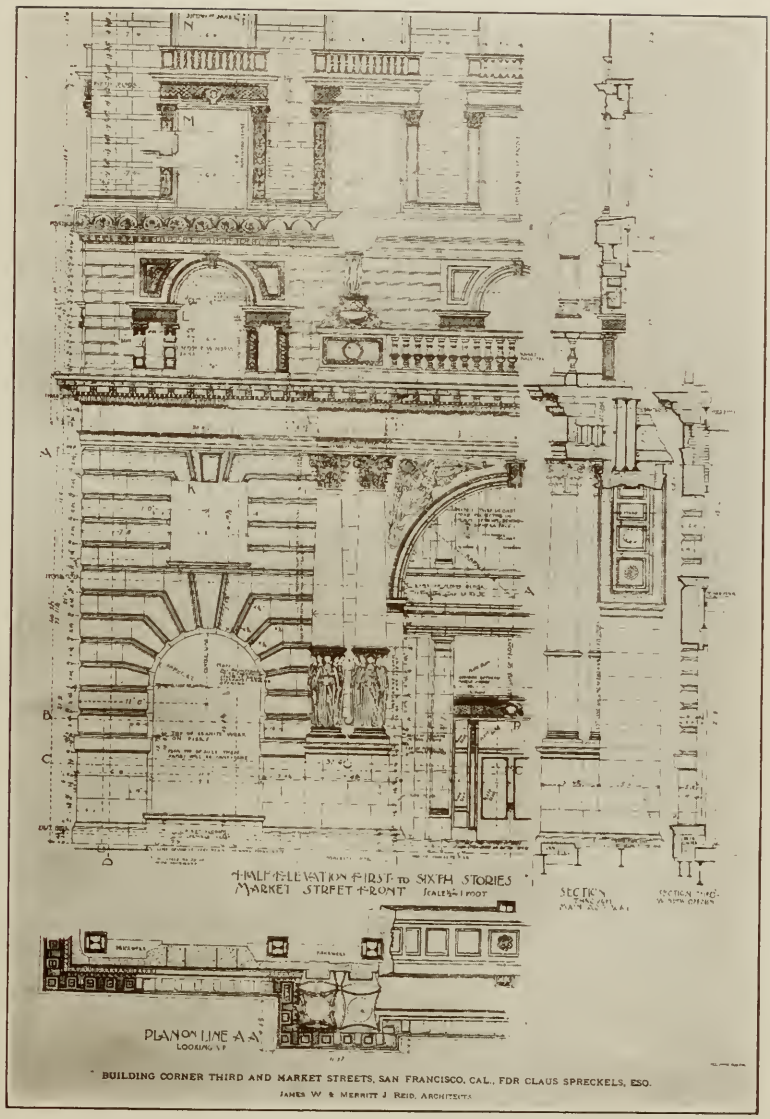
That this piece of architecture attracted the attention of the outside world is again illustrated in its selection, by a member of the London Council, as an ideal type of semi-municipal and monumental structure for the city of London, and the engagement of Reid Bros. to design a building of similar character 100 by 100 feet by 400 feet in height, proposed for a public square in that city, the elevation of which is herein shown. This is the most notable tribute that the metropolis of the Old World has ever shown to the young metropolis of the Occident.

The ability to construct safely, particularly in regions subject to seismic disturbances, was no doubt an influence in the employment of these architects by the New Zealand government to prepare plans of a building, herein illustrated, for the Public Trust Department at Wellington.

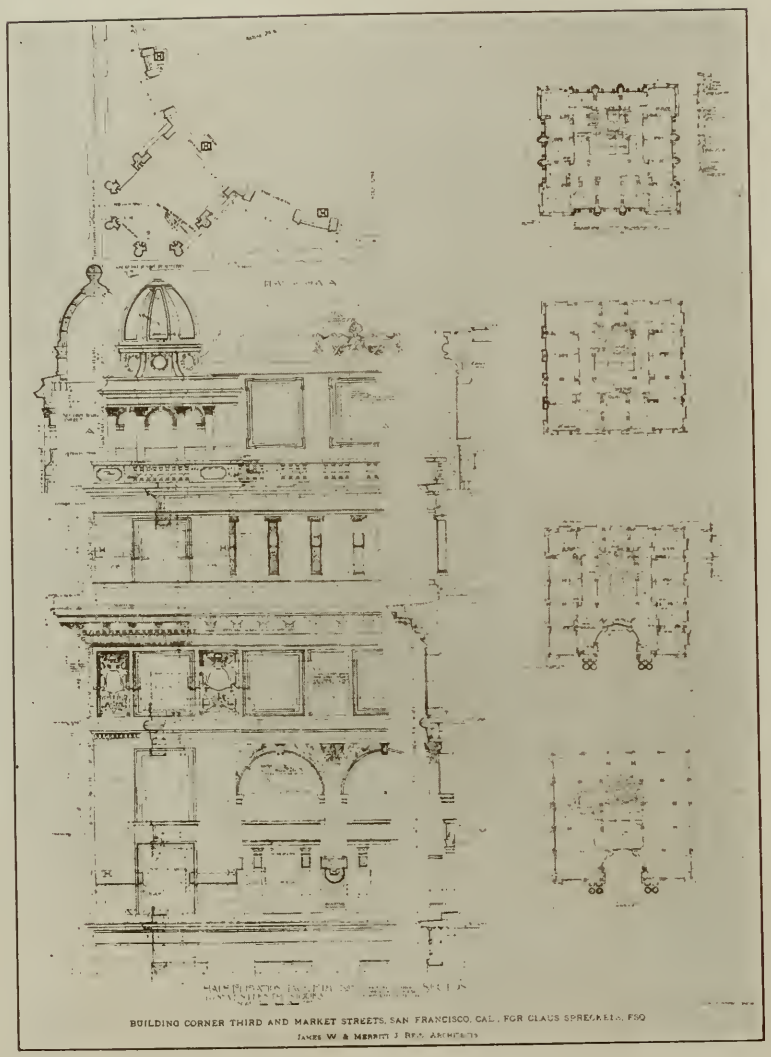
Main Entrance, Claus Spreckels Building

The buildings of Hale Bros. illustrate the evolution of the department store, and the progress of the city. The first building completed eight or nine years ago, soon gave place to the second, and is to be supplanted next year by the third and more splendid structure.

The design for the San Francisco library is one submitted by request of the trustees, to demonstrate the practicability of a main distribution building, of ample dignity and size to fill all the requirements, in conjunction with the distributing branches; but without the expenditure of so large a sum of money as first contemplated; a bond issue of lesser amount bearing four and one-half to five per cent interest being suggested to take the place of the one originally authorized at three and one-half per cent, which was found unsaleable. It also suggests a scheme in harmony with the general plan of a civic center.

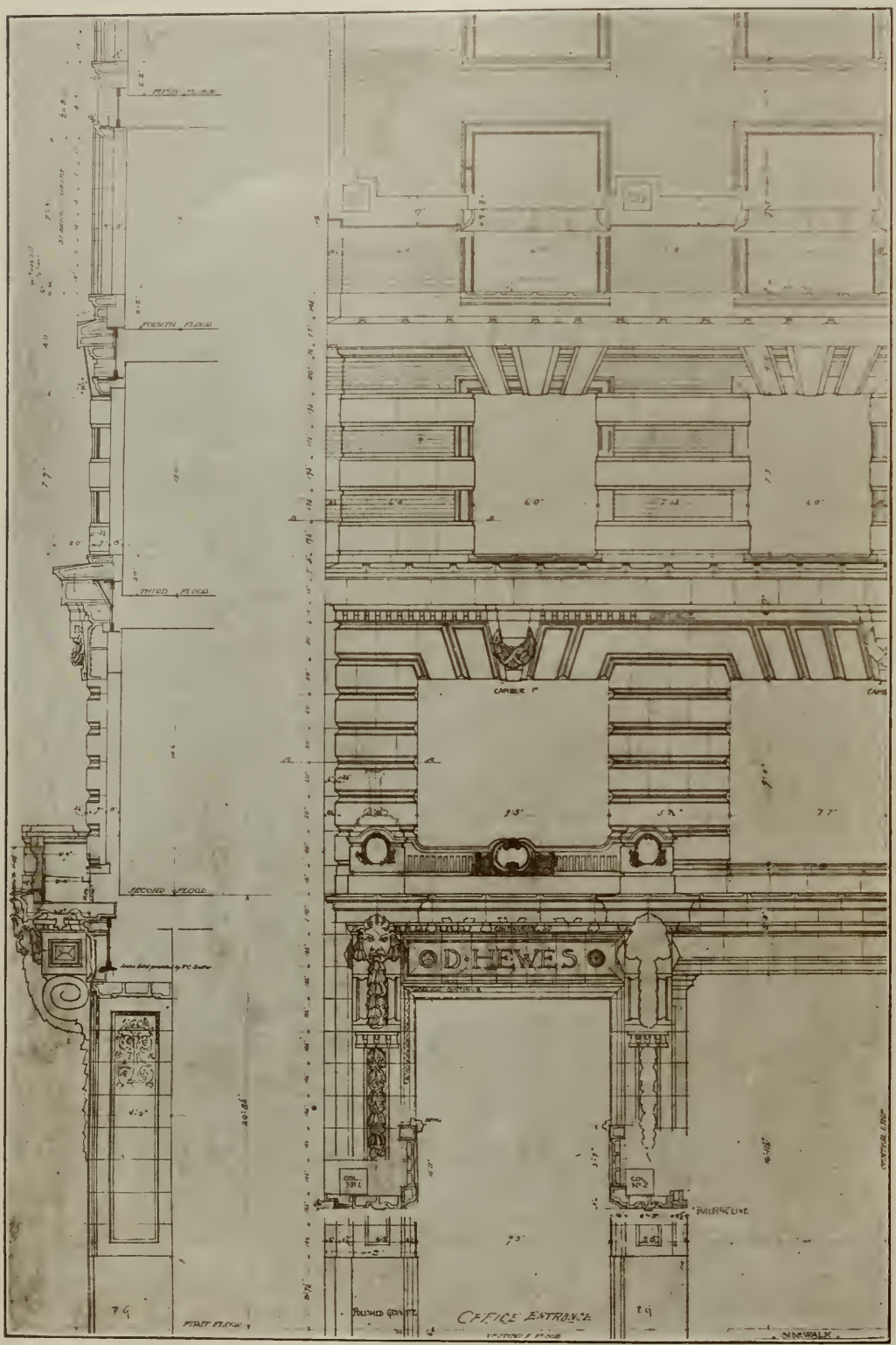

HALF ELEVATION FIRST TO SIXTH STORIES
MARKET STREET FRONT
PLAN ON LINE A A'
BUILDING CORNER THIRD AND MARKET STREETS, SAN FRANCISCO, CAL., FOR CLAUS SPRECKELS, ESQ.
JAMES W. & MERRITT J. REID, ARCHITECTS

Detail of Lower Portion, Claus Spreckels Building

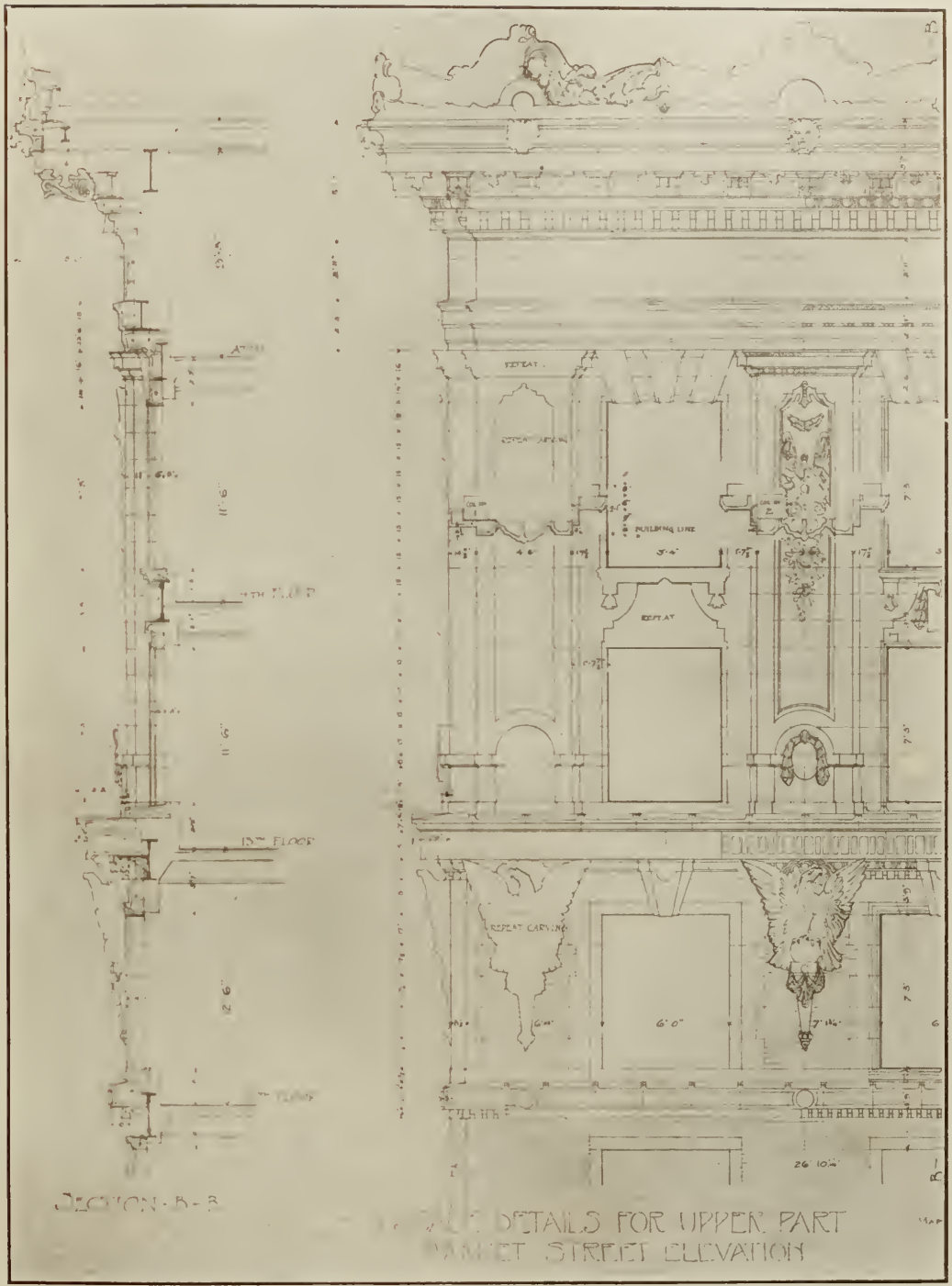


Detail of Upper Portion, Claus Spreckels Building

David Hewes Building, San Francisco
Reid Bros., Architects



Detail Lower Stories, David Hewes Building



Detail Upper Stories, David Hewes Building
Reid Bros., Architects

Butler Building, San Francisco *Reid Bros., Architects*

Building for Drexler and Preston Estates, San Francisco (O'Connor-Moffatt & Co.)
Reid Bros., Architects

Yeon Building, Portland, Ore. *Reid Bros., Architects*

Drexler Estate Building (Brittain & Co.), Market Street, San Francisco, From the Architect's Drawing

Reid Bros., Architects

Oregonian Building, Portland, Ore.
Reid Bros., Architects

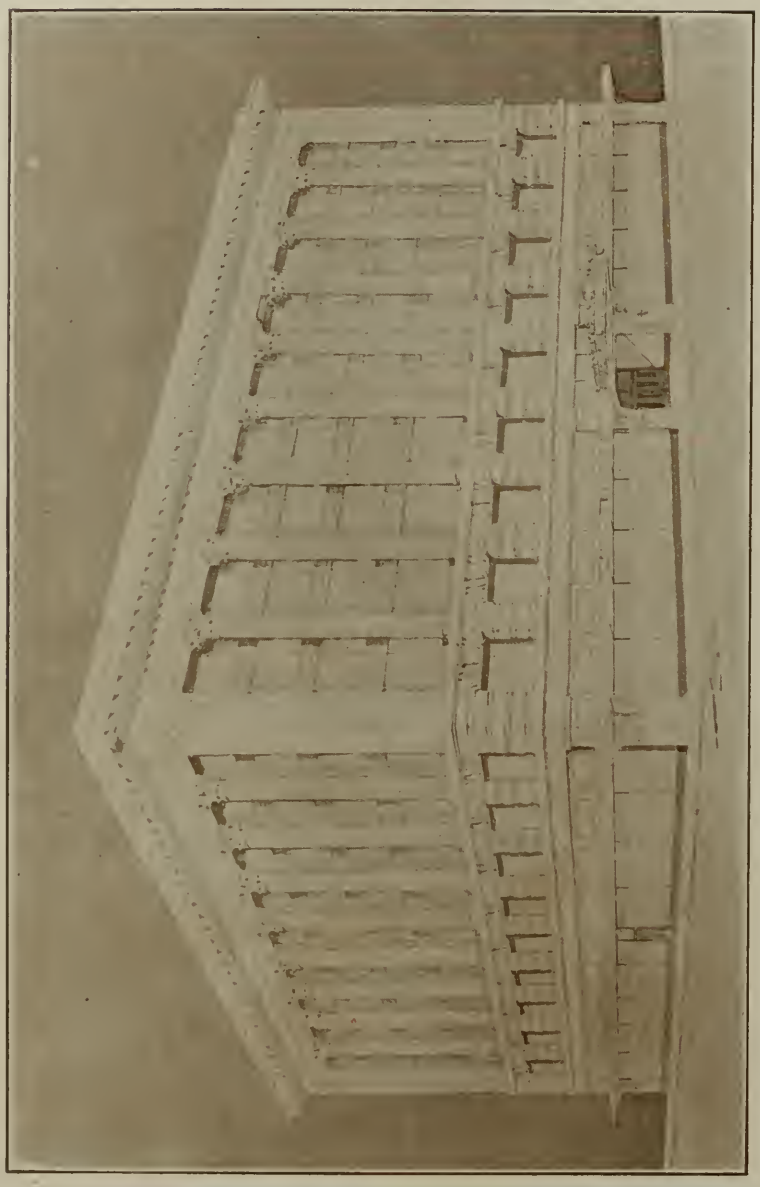
Newspaper Entrance, Oregonian Building, Portland, Ore.

Office Entrance, Oregonian Building, Portland, Ore.

The Original Hale Building, destroyed by the fire in 1906
Reid Bros., Architects

HALE BROS. INC!

The Present Hale Building, San Francisco
Reid Bros., Architects

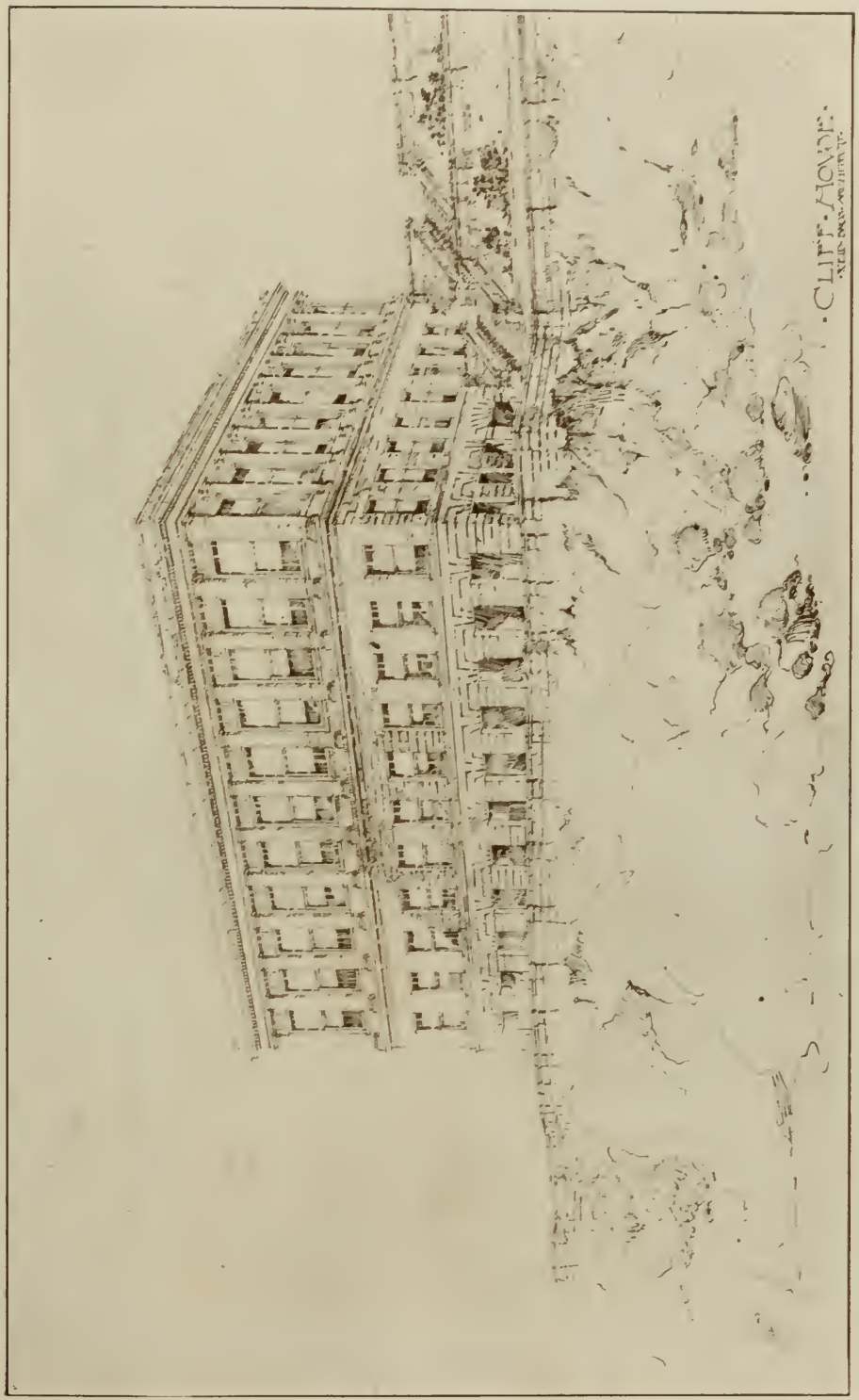


Proposed New Building for Hale Bros., Inc., San Francisco
Reid Bros., Architects

Rose Building (W. & J. Sloan), San Francisco

Thompson-Starrett Company, Builders *Reid Bros., Architects*

Hotel at Byron Hot Springs, Cal.
Reid Bros., Architects

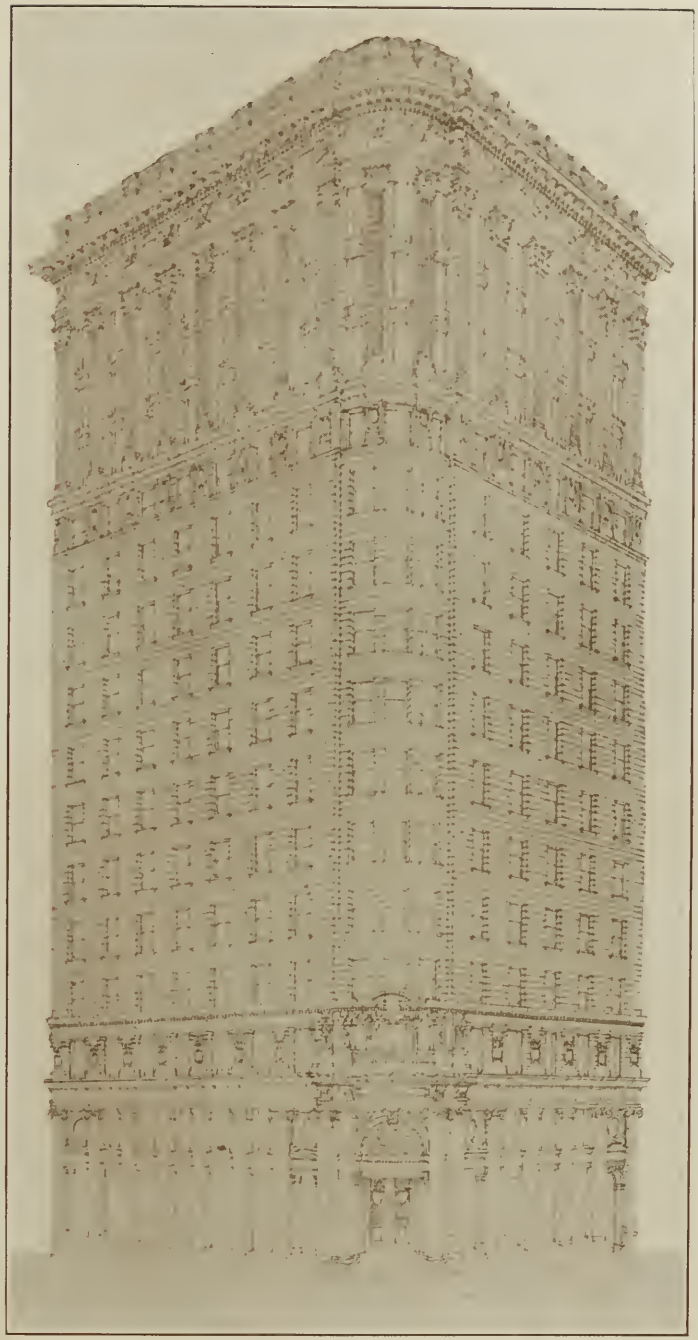


The New Cliff House, Ocean Boulevard, San Francisco
Reid Bros., Architects

Douglass Building, Los Angeles
Reid Bros., Architects

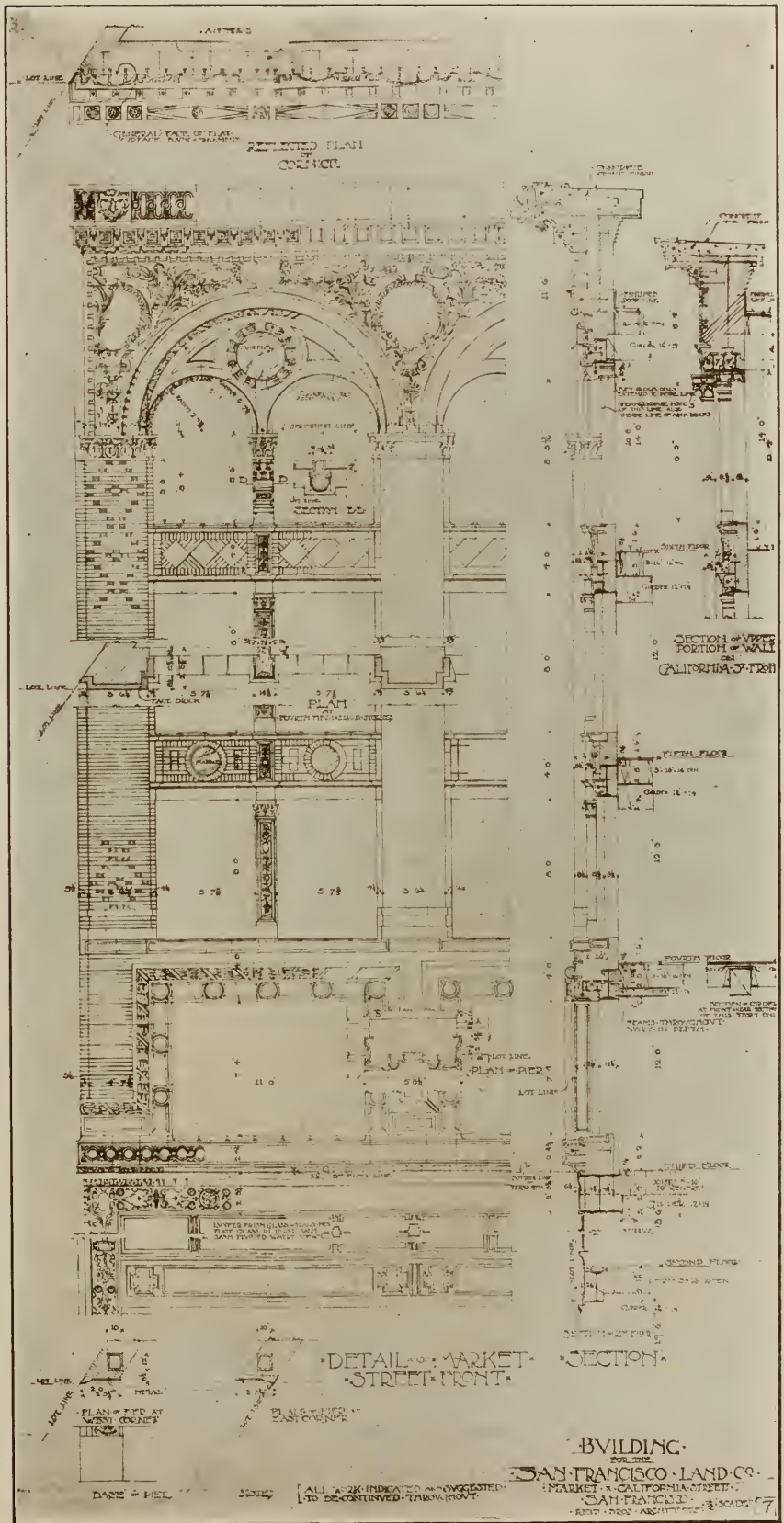
Building for Estate of George W. Call,
San Francisco
Reid Bros., Architects

Emma Spreckels Building before the fire of 1906
Reid Bros., Architects



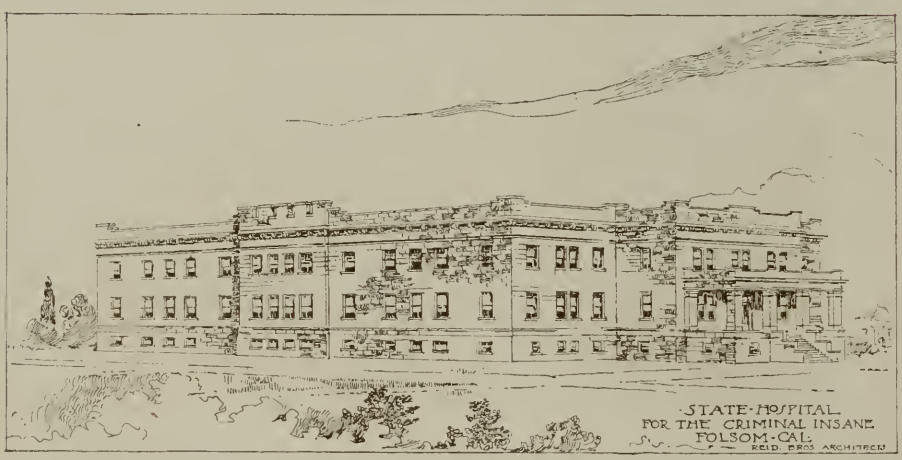
San Francisco Savings Union (Competitive)
Reid Bros., Architects

San Francisco Land Company Building
Reid Bros., Architects



Exterior Detail Market Street Front, San Francisco Land Company Building. Reid Bros., Architects

Rose Building (Architect's Drawing)

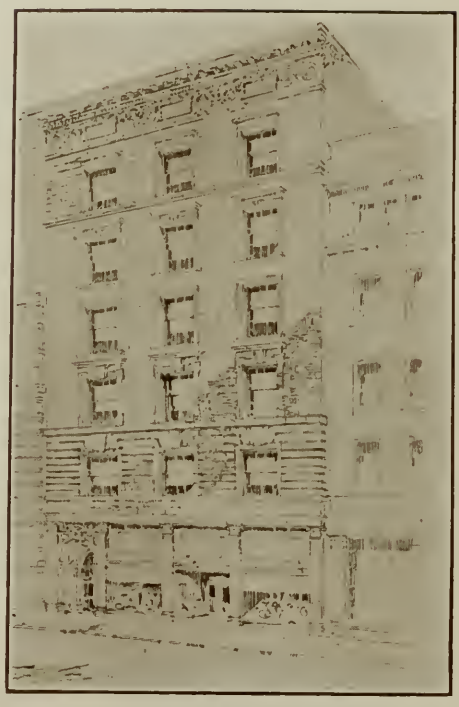


State Hospital for Criminal Insane
Reid Bros., Architects

Realty Syndicate Building, Emeryville, Oakland
Reid Bros., Architects

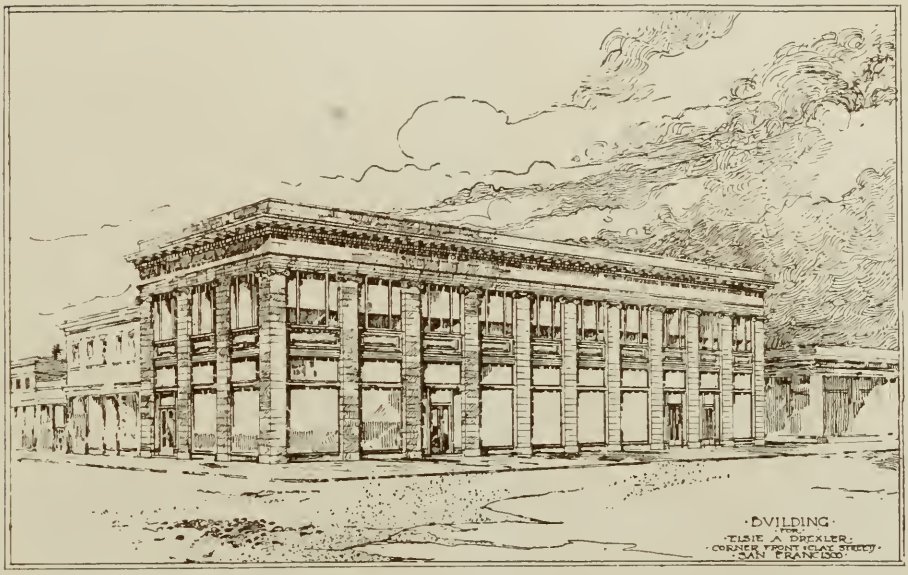
Cunningham Building, San Francisco
Reid Bros., Architects

Merritt Building, San Francisco



Claus Spreckels Annex, San Francisco

Drexler Estate Building,
Second and Minna Streets,
San Francisco
Reid Bros., Architects



Drexler Estate Building, Front and Clay Streets, San Francisco
Reid Bros., Architects

Jerome Garage, San Francisco
Reid Bros., Architects

Music Pavilion, Golden Gate Park, San Francisco
Reid Bros., Architects

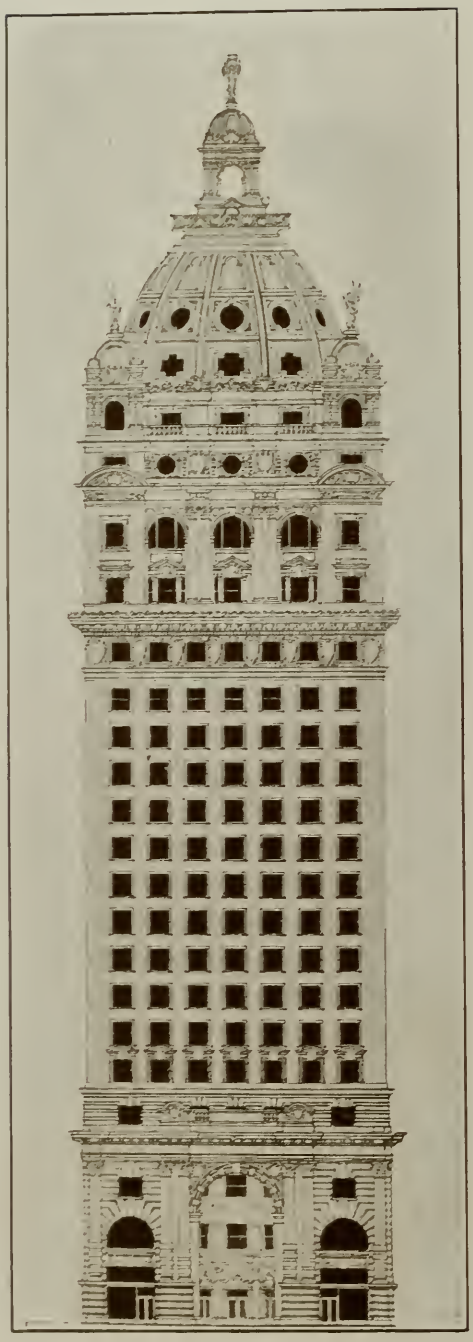
In hotel work, the Fairmont is another notable building of its kind, designed on lines commensurate with its magnificent site, ample in its interior public areas and spaces for the accommodation of large assemblages of people, and complete in its arrangement and appointments. It has been called by men of artistic judgment the most beautiful hotel in the world.

In the residence work shown, that for the late Claus Spreckels designed in the French chateau style; John D. Spreckels' house in the Georgian, and William G. Irwin's in the Italian Renaissance, show the adaptability of these various styles of architecture to the modern American requirements for palatial homes.

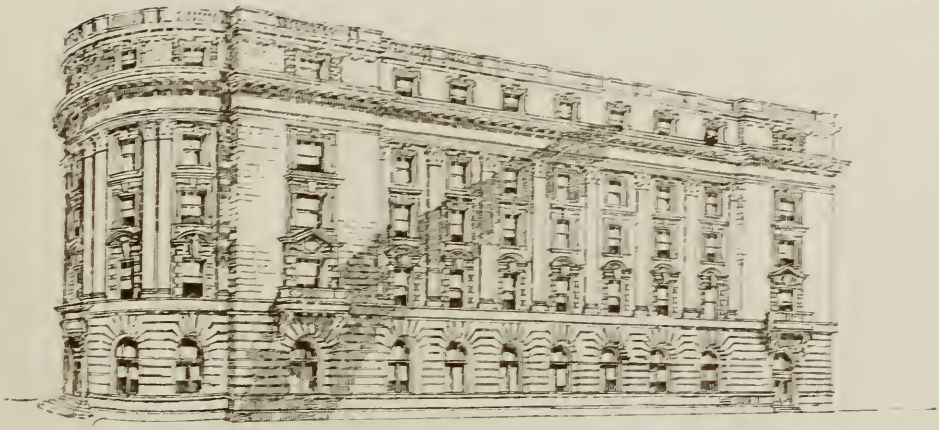
It is hardly practicable, in so brief a review as this must necessarily be, to criticise in detail all the work illustrated. There is evidence throughout, however, of a full appreciation of the broad rules that should govern, particularly in that of a residential and of a public or monumental character, as also in their larger commercial work. In some of the smaller buildings, designed strictly for business, there is perhaps shown some tendency to sacrifice to the exigencies of economy that reasonable elaboration necessary to obtain the most artistic results—a temptation that often cannot be resisted under the pressure of over rapid development and the uncertain life of the average building. On the whole, however, their work has maintained fairly well the artistic ideals and demonstrates the possibility of living up to high architectural standards, even in this comparatively new

Music Pavilion, Bellingham, Wash.
Reid Bros., Architects

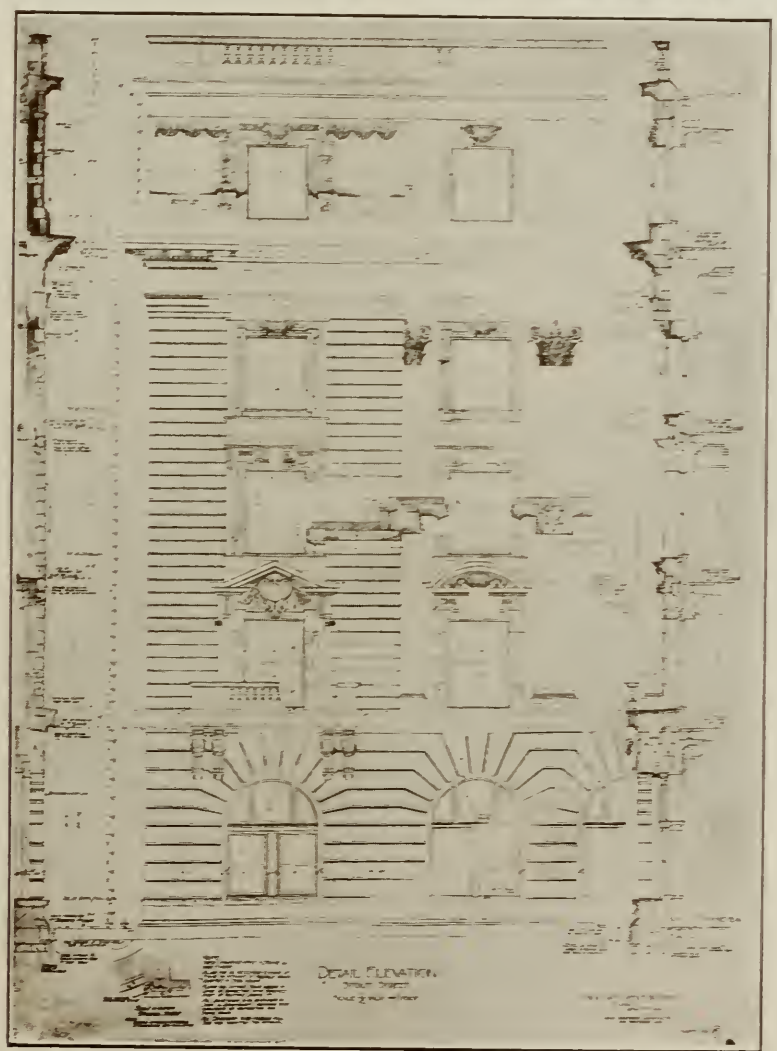
Carnegie Library, San Rafael, California
Hoyt Bros., Builders *Reid Bros., Architects*



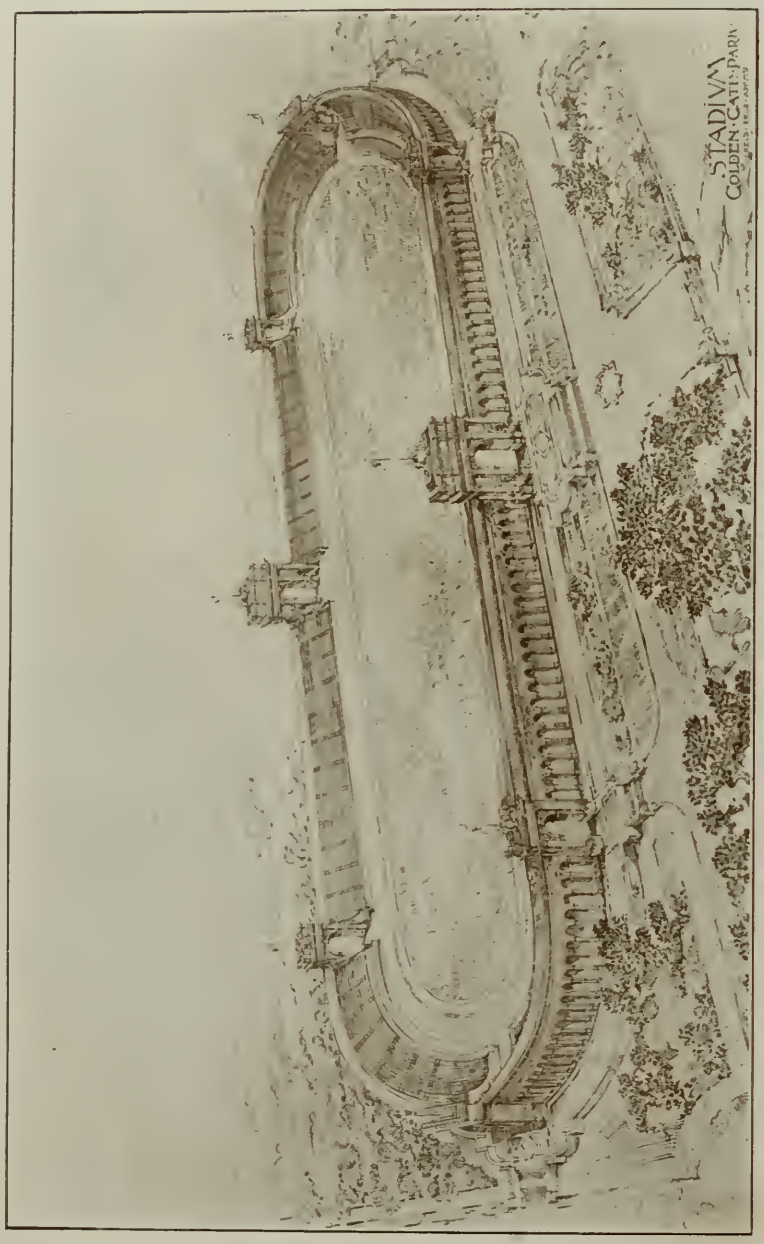
Semi-Municipal Building, London, England
Reid Bros., Architects



Government Building for the Public Trust, Wellington, New Zealand



Detail, Government Building for Public Trust, Wellington, New Zealand



Stadium, Golden Gate Park, San Francisco, as it will appear when completed
Reid Bros., Architects

Mercantile Trust Company (Competitive), San Francisco
Reid Bros., Architects

country where economy of construction is more strongly demanded than in the older localities.

The influence of the Italian school is apparent in most of their work, and this is perhaps the logical outcome of those influences—climatic, geographical and topographical—that, common to the two countries, gave trend to the Renaissance in Italy and to its adaptability here. One cannot help feeling that this influence will become more apparent as San Francisco rises to her destiny as the dominant city of the Pacific Coast.

* * *

Edison Concrete House Being Built in Sacramento

A CONCRETE house moulded from forms after the method advocated by Thomas A. Edison is being constructed in Sacramento by J. E. Mayo of that city at a cost of $8,500.

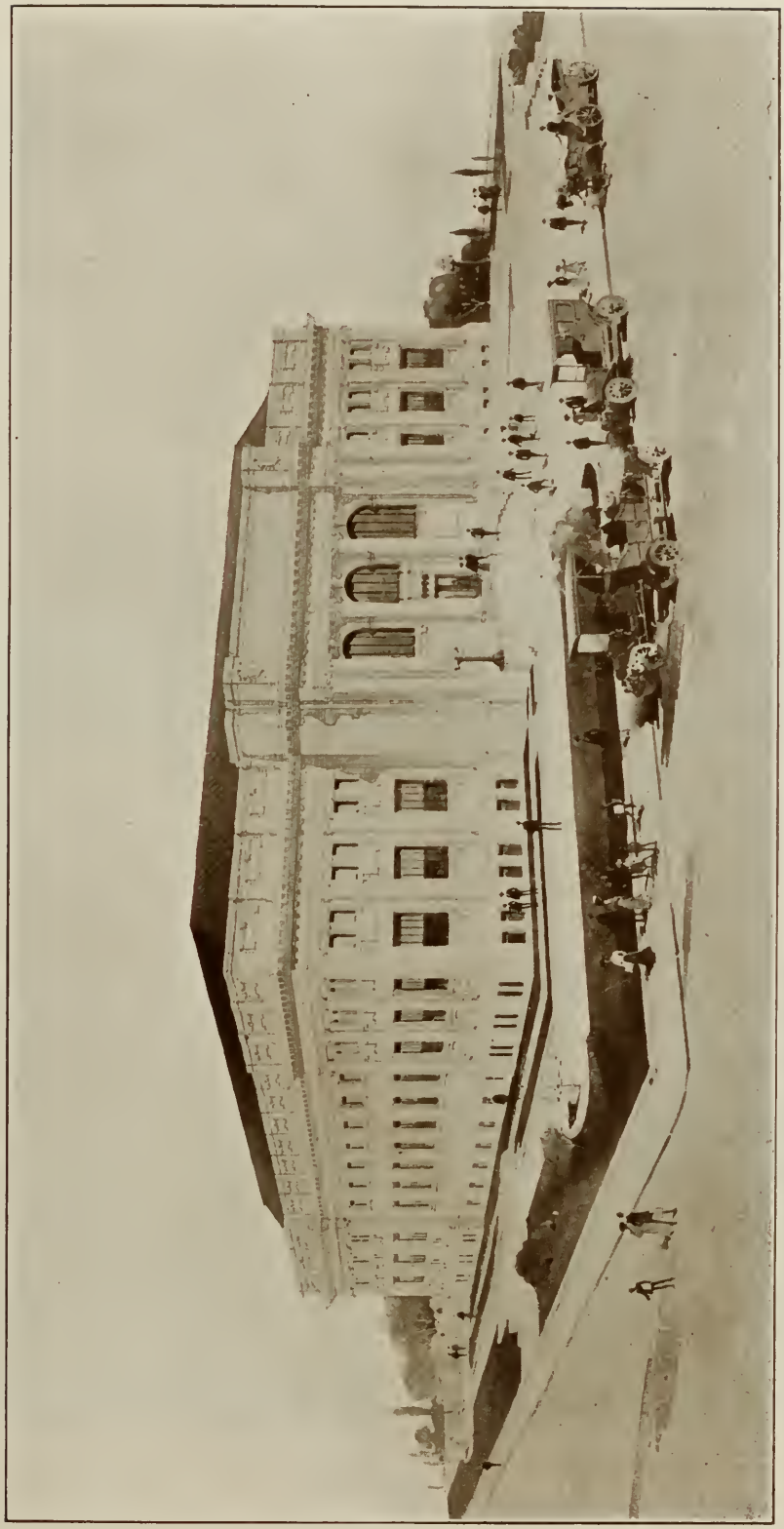
According to the building permit, which was issued to Mayo in August by City Clerk Desmond, the structure is to be a double house containing six rooms in each portion, will be two stories and used as a dwelling. It is, of course, built entirely of reinforced concrete.

It is stated that if the project proves a success Mayo intends to go into the business of building concrete houses. Once he gets the forms built, it is stated, houses can be erected at a much less cost than for the initial structure.

For the first time at any cement show, the Edison poured-cement house will be exhibited to the public at the coming cement show in Madison Square Garden, New York City.

Methodist Episcopal Church (Competitive), San Francisco
Reid Bros., Architects

Episcopal Chapel, Coronado Beach, California
Reid Bros., Architects



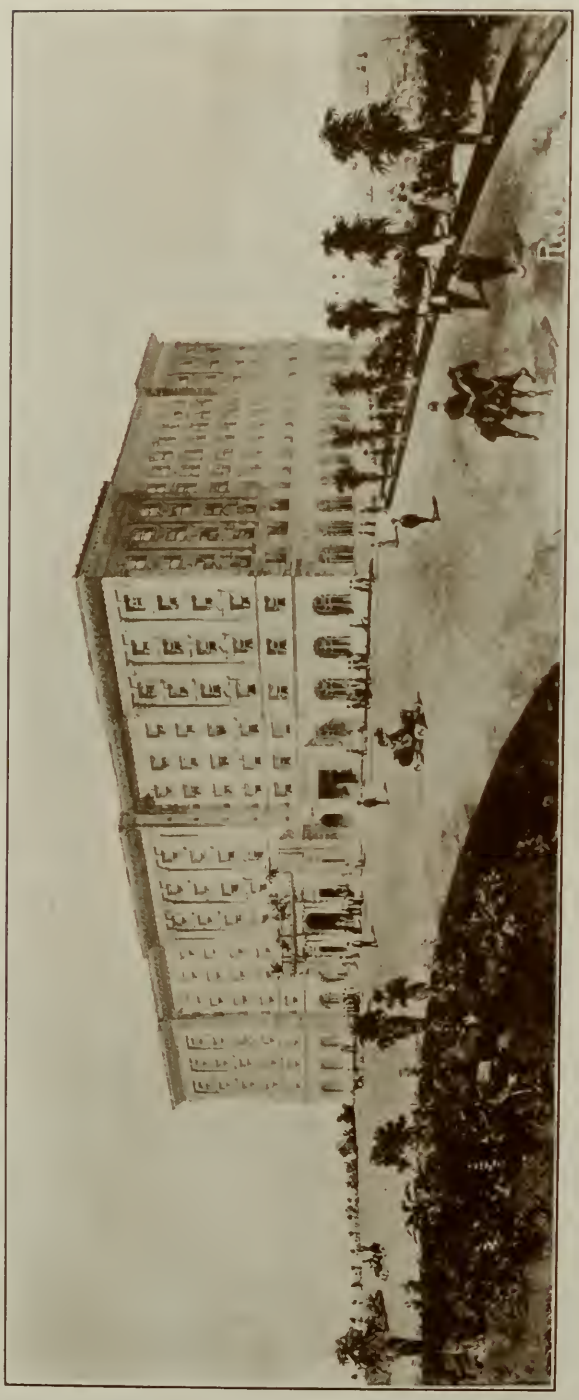
Suggested Design, Public Library Building, San Francisco, as Proposed by the Trustees on Revised Bond Issue
Reid Bros., Architects

Officers' Quarters, Yerba Buena Island
Reid Bros., Architects

U. S. Marine Barracks, Yerba Buena Island
Reid Bros., Architects

Episcopal Church, Evansville, Ind.
Reid Bros., Architects

A Country Residence
Reid Bros., Architects



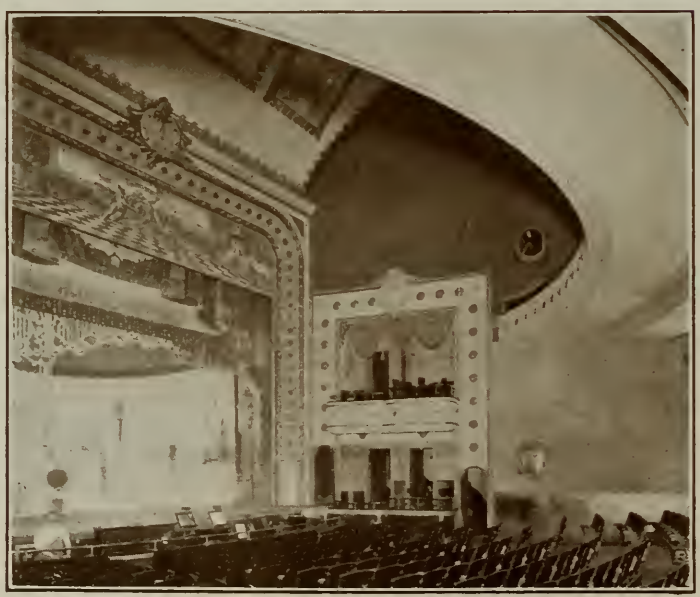
Fairmont Hotel, San Francisco (Mason Street Front)
Reid Bros., Architects

Fairmont Hotel, San Francisco (Powell Street Front)

Interior Views, Fairmont Hotel, San Francisco

Alvin Theater, Pittsburg, Pa.
Reid Bros., Architects

Grand Opera House
Evansville, Ind.
Reid Bros., Architects



American Theater, Designed for Moving Picture Entertainments. The Only Down Town San Francisco Play House which Withstood the Earthquake and Fire.
Reid Bros., Architects

Foyer, Alvin Theater, Pittsburg, Pa.
Reid Bros., Architects

Isis Theater, San Diego
Reid Bros., Architects

Residence of the Late Claus Spreckels, San Francisco
Reid Bros., Architects

Reception Room, Claus Spreckels Residence

Grand Staircase, Claus Spreckels Residence

Mantel in Reception Room

[illegible]

[illegible]

Residence of Mr. William G. Irwin, San Francisco

Music Room, Residence of Mr. L. S. Sherman, San Francisco.
Reid Bros., Architects.

Corner of Music Room, Residence of Mr. L. S. Sherman.

Grand Hall, Residence of Mr. John D. Spreckels, San Francisco

Turkish Room, Residence of Mr. John D. Spreckels

Staircase Hall, Residence of Mr. John D. Spreckels

Residence of Mr. Henry H. Breeden, San Francisco
Reid Bros., Architects

Residence of Mr. Thos. H. Williams, San Francisco
Reid Bros., Architects

Residence of Mr. Daniel T. Murphy, San Francisco
Reid Bros., Architects

Residence of Capt. Charles T. Hind, Coronado Beach
Reid Bros., Architects

Residence of Mrs. M. H. Weed, San Francisco
Reid Bros., Architects

Residence of Mr. John D. Spreckels, Jr., San Francisco
Reid Bros., Architects

Russell Sage's Widow Builds Fireproof "City"

MRS. RUSSELL SAGE, widow of the late millionaire, has started in to create a "model city," all fireproof. It is to be at Forest Hills, Long Island, and its purpose is to provide comfortable homes for people of moderate means. Each man will be enabled to own his own home, with a little garden, and there will be playgrounds and plenty of fresh air for the children.

At the outset Mrs. Sage and her advisers decided that the homes must be fireproof. An experiment station, for the testing of all kinds of materials, has been built at Seawaren, N. J. Grosvenor Atterbury, the architect who planned the new community, is in charge of the tests.

The construction of the "model city" has now been begun with two terra cotta houses. Walls, floors and partitions in these buildings are to be of the same kind of blocks used in the "sky-scrapers" of New York City. This material has been found, after elaborate tests, to be the most thoroughly fire-resisting.

The terra cotta blocks now being used at Forest Hill went through a heat of 2,000 degrees Fahrenheit in the process of manufacture, so that it is not possible for them to be affected by any degree of heat that may be encountered in the future. The hollow spaces in the blocks act as non-conductors of heat, and thus the terra cotta houses have the advantage of being warmer in winter and cooler in summer than other houses.

The Public and Architectural Competitions

By FRANK MILES DAY, Chairman

RECENT editorials in architectural journals strongly support the present effort of the American Institute of Architects to improve competitions, yet communications and minor notes show, in some cases, such a lack of information that it seems well that some statements on the subject should be made.

It is obvious that any improvement in the conduct of competitions can take place only as a result of the general enlightenment of the profession and through it of the public. After many years of discussion, the profession appears to have reached substantial agreement, as to what are the essentials of a well conducted competition. Without such agreement, the present advanced position of the Institute would be out of the question.

The Institute has made many attempts to inform the public as to the proper conduct of competitions and to dissuade architects from taking part in them except under proper conditions. Its carefully prepared statements, though they had an excellent educational effect, were without other result since they were merely advisory.

The Institute never has presumed, nor does it now presume, to dictate the owner's course in conducting a competition, but it aims to assist him by advising the adoption of such methods as experience has proved just and wise. But the Institute has at last reached the conclusion that the most effective means within its command for the improvement of competition practice lies in seeing to it that its own members do not take part in ill-regulated competitions.

Architects generally have for many years regarded the Institute as the highest authority on the ethics of the profession, and the Institute is certainly within its province when it instructs its members as to what is good competition practice and requires them to conform to it, just as when it instructs them on other questions of professional ethics and requires them to conform to these instructions.

In consonance with these thoughts, the convention of 1907 adopted certain principles as in its opinion fundamental to the proper conduct of competitions, while that of 1908 decided that any competition not conducted in accordance with them should be formally disapproved by the Institute.

In practice it was found that it was impossible to gain a knowledge of all or even of any large proportion of the competitions throughout the country so as to disapprove those not in harmony with the Institute's principles. It was also difficult and expensive to notify all members each time that a competition was disapproved. Thus many badly conducted competitions escaped attention and were open to the participation of members.

It became obvious that the converse of this scheme provided a more practicable course. The convention of 1909, therefore, adopted the principle that participation in any competition the program of which has not been approved by the Institute is unprofessional conduct.

The convention gave the board authority to approve acceptable programs and power to delegate that authority. Thus it became necessary for the board to establish a standard by which to test programs submitted for approval. Fortunately, the opinion of the profession as to the essentials of a good program being well crystallized, the board found its task easier than it had anticipated.

The formulation of these essentials resulted in a "Circular of Advice Relative to the Conduct of Architectural Competitions" which serves the

purpose of informing the public on the whole subject; of instructing architects as to what the Institute regards as good practice; of strengthening the position of advisers chosen to conduct competitions as well as of setting up a standard to which programs must conform if they are to receive the approval of the Institute.

The board delegated its power of approval to the Standing Committee on Competitions and to a sub-committee for the territory of each Chapter. Each of these sub-committees deals only with competitions for work to be executed within its own territory. Programs for work not within the territory of any Chapter are passed upon by the Standing Committee.

The Circular of Advice, is, in general, an essay on competitions and it is in the main—as its name indicates—merely an advisory document. The board found comparatively few things so essential to the proper conduct of a competition as to be made mandatory. Its instructions to the committees charged with giving the Institute's approval are that the program should conform to the spirit of the Circular of Advice, but as this statement might be interpreted in various ways, more specific directions are given:

1. Approval must be withheld if a program appear not to be in consonance with law.

2. Except the law require an open competition, approval may not be given to one in which no precautions are taken that the competitors are competent to design and execute the work.

3. As experience shows that unless a professional adviser be in charge of them, competitions are almost always hopelessly bad, the Institute will give its approval to no competition that is not in charge of such an adviser.

4. The Institute will approve no program that does not constitute a contract between the owner and competitors guaranteeing that an award of the commission to design and supervise the work will be made to one of the competitors, nor will it sanction a program which fails to establish the terms of the winner's employment as those of the Institutes' schedule. There must also be provision for adequate compensation in case of the architect's dismissal or of the abandonment of the work.

It would seem that no argument is necessary to show that, lacking any of the above requirements, the program fails to reach such a standard as the Institute should set for its members.

A brief summary of the advisory portions of the circular would show that they treat the subject as follows:

1. It is pointed out that competitions are not generally to the advantage of the owner, that it is better to employ an architect on the basis of his fitness for the work and that if a competition must be held, the interests of the owner will be best served by equitable and definite agreements between himself and the competitors.

2. The role of Professional Adviser is defined and his employment urged.

3. The owner is advised not to hold a competition open to all comers, but to carefully select his competitors.

4. The kinds of competition recognized by the Institute are defined.

5. Strict anonymity of competitors is urged.

6. The owner is advised to avoid various pitfalls in respect to the cost of the proposed work, competitors' and builders' estimates, etc.

7. The owner is urged to receive the advice of a competent jury before making the award.

8. Reasons are given why drawings should be as few in number and simple in character as will express the general design of the building.

9. A program is outlined in detail, some twenty statements being made as to its essential contents.

10. The question of what constitute proper agreements between owner and competitors and between owner and winner is treated at length.

11. The proper conduct of architects and of the owner is considered.

The circular was issued upon the 30th of March, 1910, and was widely circulated among members of the profession and the public generally through owners, editors, educators, etc. Copies of it may be obtained from Mr. Glenn Brown, Secretary of the American Institute of Architects, the Octagon, Washington, D. C. Its reception was marked by general approval and it has since then been in successful operation. Many programs have been brought into harmony with its requirements and have received the approval of the Institute. In some instances, the owner on receiving the circular has decided to abandon the idea of a competition, and has chosen his architect directly, a much to be desired result. In the instances in which the program was not brought into harmony with the principles approved by the Institute, the results have justified members in not taking part in the competition, since the outcome in most cases shows either failure to appoint any competitor as architect or failure to proceed with the work for which the competition was held.

* * *

The Veneered Brick House

(Western Canada Contractor.)

SEEMINGLY there is more favor being shown toward the veneered brick house for modest and even fairly elaborate dwellings than was ever thought of before, and sometimes it looks like this is to be a popular mode of construction during the next season or two. The idea is not new by any means, that of building a frame structure with one layer of brick on the outside in place of the old wooden beveled siding or weatherboarding and the lath and plaster on the inside. Houses of this kind have been built for quite a number of years, but it is only during the past two or three years that the idea has extended into what might be termed popular favor. It seems to find favor not merely in the matter of economy in construction by the use of fewer brick in the wall, but many show a preference for it on the ground that it furnishes a dryer house and that there are advantages in the hollow or dead air space between the outer brick wall and the inner plaster that are very desirable. It makes a substantial house and there are really no very strong objections that may be urged against its finding favor, other than it is not of the same fire resisting properties as a house built of solid brick walls. It is probable that in time we will develop from the veneered brick idea into the construction of more brick walls with hollow spaces between the inner and outer walls for the sake of the dead air space and its insulating properties. Whatever may come in the distant future though, it looks like in the near future there will be a lot of favor shown to the veneered brick house, especially in the building of moderate cost homes.

The thing for brick manufacturers to give attention to in this connection to help themselves along is to encourage this form of construction in preference to the regulation frame with beveled siding or outer wall. The difference in the cost of construction is very small, and if the prospective builder's attention is called to it, there is a chance that many of those who contemplate building next year will give up the idea of the beveled siding outer wall made of wood and use in lieu thereof the brick wall, thus saving the expense of painting and securing a better and more substantial house at a very small increase in the cost.

Thinks Some Architects are too Arbitrary

(By a Perturbed Contractor in Building Age.)

"IN the interest of the building trades in general and the carpenter trade in particular, I would like to ask if it be possible for the contractors' and builders' organizations to devise ways and means to curb the arbitrary power of the architects. The way some architects act is almost beyond the endurance of the contractor. We all like to make a good job, and the architect, as representative of the owner, has a right to expect it, provided his drawings and specifications call for such, but if he specifies No. 2 material he has no right to expect No. 1. He usually wants a first-class job in material and workmanship at the expense of the contractor.

"Suppose, for instance, that the specification calls for No. 2 flooring or sheathing; he has no right whatever to expect the contractor to cut out knot-holes, bad places, or dead knots, except when so stated in the specifications. As a rule, however, this is not done. No. 2 lumber is specified, and the architect wants the contractor to make No. 1 out of it. For the contractor it would be cheaper to use No. 1 at the start, but if he figured accordingly his figures would be too high and he would fail to get the job. It is the same with the siding. The architects want B or C in the specifications, but require A on the house, and so we might continue from basement to roof.

"The plans and specifications are the expression of the owner and his architect, and they can and have a right to expect everything that is written or drawn in there, but not a blamed thing more. It is certain that where plans and specifications call for a first-class job, both in material and workmanship, the contractor's figures will be correspondingly high, and that is what the architect tries to avoid by trickery, and he generally succeeds. On the other hand, the architects will claim that the contractors try to skin the job, and I am sorry to say this is also true in some instances, but they have to do it in order not to be swamped, for the architects and owners are so exacting that the contractor is trying to pull his end of the rope. This sort of play, started by owner and architects, sometimes results in their being beaten at their own game.

"If the architects would start out to do right, I will wager they will be treated right by the contractors. As an example: Architect A has a plan for Mr. So-and-So, and he wants Builder B to figure on it. Mr. B, after studying the plans and specifications, gives the architect a reasonable figure. In the meantime the architect has secured figures from Builders C and D, and tells Mr. B his figures are too high, and that he must try to do it for less, so B throws off a hundred or so, and the architect tells him to call again after a few days to get his decision. With this lowered bid of Mr. B he goes to C and tells him the same thing he told B; as a consequence, C lowers his bid in order to get the job, and is told by the architect to wait a day or two to get his decision. Again, with the lowered bid of C he goes to D and repeats the same story, with possibly some additions to it—that the job has to be cheap, even if the material should be of a little less quality. D comes down and finally gets the job. As the architect knows that he has at last the bottom price, D is started on the job, and has material of less quality as the architect told him he could use, but now the trouble commences, for such-and-such material is specified and has to be used. As a consequence, D is skinning the job wherever possible.

"Instead of opening the bids at a set hour and place in the presence of all contractors, and giving the job to the lowest or most able builder, they try to get the better of the contractors and everybody else, which, in

my opinion, is most reprehensible practice. Then, again, they occasionally have another game up their sleeves, which is, that details will be furnished as the work progresses. This is a very unfair practice, as the details are almost always more elaborate than the general drawings indicate. Again the contractor or millman gets the worst of the bargain, but he will try some way to squeeze out, or resort to some other trick to get even. It must be insisted upon by the contractors that plans and specifications should be complete before they are to figure on them, and should be so plain and correct that no verbal explanation of the architect should be necessary, for it seems to be the habit of the architect to explain it only from his point of view or according to his opinion, at the cost of the contractor's pocketbook. According to the general rules in most standard specifications, the architect's word is law and final. This is wrong, and should be remedied—the sooner the better.

"We have in all our large cities contractors' associations. Could they not do something to relieve contractors of this burden?

"Again, there is something else that I would like to bring before the readers of this department, which is this: Are the contractors going to stand any more of the architects' mistakes? It is enough to stand for their own, and they should not be obliged to be responsible for those of the architect, or anybody else. The architects take refuge behind the obnoxious 'General Conditions,' with which every contractor is familiar. This, in my opinion, is very unfair, and ought to be changed."

* * *

Building Barges of Concrete

A SACRAMENTO man has commenced the construction of a reinforced concrete barge which he declares will be an improvement on the wooden barge in every respect. E. W. Hartman is the designer and builder and he has been encouraged in his latest undertaking by the success that has marked the construction of thirty-six concrete mud-scows used in building the Panama Canal. A writer in the Sacramento Bee thus describes Mr. Hartman's plans for a concrete barge:

The concrete barge draws only three feet four inches—whereas a wooden boat of the same size would draw four feet. The load limit of the concrete barge is 560 1-10 tons, being 190 tons greater than the load limit of a wooden barge of the same dimensions.

The dimensions of the concrete barge will be 73 feet 4 inches by 32 feet. Its cost will be about $5,500, whereas the cost of a wooden barge of the same size would be about $7,400. The depth of the concrete barge is seven feet. The space between the bottom and the deck is divided into sixty air-tight chambers containing a total of 25,120 cubic feet of air.

The sides and bottom of the barge are concrete walls six and seven inches in thickness, and reinforced in every part by a network of steel. It is declared that the six-inch concrete side is stronger than eight inches of plank would be. It is practically impossible to sink the concrete barge on account of the air-chambers.

* * *

Standing Committees for San Francisco Chapter

The following standing committees have been named by San Francisco Chapter, A. I. A., for the year 1910-11:

Legislative—B. J. Joseph, chairman; John L. Hatch, T. Patterson Ross, John Bakewell, Jr., Louis Stone.

Building Laws—George Applegarth, chairman; A. Schroepfer, C. Paff, George A. Wright, Henry A. Schulze.

Housing Committee—John Bakewell, Jr., chairman; C. W. Dickey, B. Joseph.

Headquarters—George Rushforth, chairman; E. J. Vogel, F. Righetti.

Publicity—T. J. Welsh, chairman; Wm. A. Newman, J. Cather Newsom.

Architectural League and Education—August Headman, chairman; George H. Kelham, Arthur Brown, Jr., Kenneth MacDonald, Earl Scott.

Competitions—William Mooser, chairman; Sylvain Schnaittacher, Hermann Barth, George McDougall, Clinton Day.

Fine Arts and City Adornment—Albert Pissis, chairman; John Galen Howard, Edgar Matthews, W. B. Faville, Willis Polk, C. P. Weeks, Smith O'Brien.

Committee Home Industry League and Commercial Bodies—Henry A. Schulze, chairman; George Applegarth, D. Franklin Oliver, Frank Shea, F. H. Meyer.

Revision of Constitution and By-laws—Lionel Deane, chairman; Sylvain Schnaittacher.

* * *

The Coming Institute Convention

THE following preliminary announcement of the 44th convention of the American Institute of Architects to be held in San Francisco January 17th, 18th and 19th, has been sent out by Glenn Brown, secretary:

"The American Institute of Architects will hold the next convention in San Francisco, California, January 17, 18 and 19, 1911.

"After the president has delivered his annual address the reports of committees will be received. To obtain prompt action and discussion the board has ruled that all reports must be in the hands of the secretary of the Institute one month before the convention, so that the committees appointed by the president may consider such reports and present their conclusions and resolutions following the reading of the report.

"In addition to the routine business of the Institute, the subject of interest before the convention will be the architecture of the Pacific Coast, on which papers are expected: The Development of Architecture on the Pacific Coast and the Rehabilitation of the City of San Francisco; the Aesthetic Problems of and what the Coast Has Accomplished in City Planning, by Members of the Committee of the San Francisco Chapter, J. G. Howard, Chairman. Mr. Charles H. Bebb, of Seattle, will deliver a paper on The Salient Points of the Architecture of the Northern Pacific Coast; while Mr. A. B. Benton, of Los Angeles, will present a paper on the History and the Present Status of the California Missions.

"It is the intention to have the members of the Institute and their families meet in Chicago, where a special train will be furnished to San Francisco.

"The members will go in a body to Los Angeles after the business sessions of the Institute have been held in the former city.

"From Los Angeles the members may return by any route they think most interesting, in groups or alone.

"Arrangements have been made with the Chicago & North Western Railway Company, from Chicago, going through Denver and Salt Lake City. From Los Angeles the return may be made so as to stop at Yosemite Valley and the Grand Canyons of the Colorado in Arizona. At this time of the year the Yellowstone Park will be closed and a return through Canada is not considered practicable.

"From the East, it is proposed that a car from New York take the Boston, New Jersey and Philadelphia delegates, and that the delegates from Baltimore, Washington, Harrisburg, Pittsburg, Cincinnati and Louisville join the train en route for Chicago."

Among the Architects

American Institute of Architects
(ORGANIZED 1857)

Next Convention in San Francisco, in January, 1911.

OFFICERS FOR 1910-11

PRESIDENT.....IRVING K. POND, Chicago
FIRST VICE-PRESIDENT...WALTER COOK, New York
SECOND VICE-PRESIDENT....EDGAR V. SEELER, Philadelphia
SECRETARY AND TREASURER....*GLENN BROWN, Washington, D. C.
AUDITORS... { JAMES G. HILL, Washington, D. C. / ROBERT STEAD, Washington, D. C.

Board of Directors for 1910-11

For Three Years—Cass Gilbert, New York; Ralph Adams, Cram, Boston; John Galen Howard, San Francisco.

For Two Years—Frank C. Baldwin, Detroit, Mich.; *S. B. P. Trowbridge, New York, N. Y.; John M. Carrere, New York, N. Y.

For One Year—Frank Miles Day, Philadelphia; R. Clipson Sturgis, Boston, Mass.; George Cary, Buffalo, N. Y.

*Executive Committee.

San Francisco Chapter

PRESIDENT.....WILLIAM MOOSER
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California State Board of Architecture

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Washington State Chapter, A. I. A.

OFFICERS FOR 1910-11

PRESIDENT.....DAVID J. MYERS
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TREASURER.....C. R. ALDEN

Architectural League of the Pacific Coast

Next Convention, Los Angeles

OFFICERS FOR 1910-11

PRESIDENT.....ALFRED F. ROSENHEIM, Los Angeles, Cal.
VICE-PRESIDENT.....E. F. LAWRENCE, Portland, Or.
SECRETARY.....JOHN KREMPEL, Los Angeles, Cal.
TREASURER.....W. R. B. WILCOX, Seattle, Wash.

San Francisco Architectural Club

OFFICERS FOR 1910-11

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SECRETARY.....T. BEARWALD
TREASURER.....A. L. LAPACHET
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Los Angeles Architectural Club

OFFICERS FOR 1910-11

PRESIDENT.....MYRON HUNT
VICE-PRESIDENT.....FRANK L. STIFF
SECRETARY.....H. E. BEAN
TREASURER.....OTTO JANSSEN

Portland Architectural Club

OFFICERS FOR 1910-11

PRESIDENT.....ELLIS F. LAWRENCE
VICE-PRESIDENT.....DAVID L. WILLIAMS
SECRETARY.....FRED ALYN
TREASURER.....JOHN M. HATTON

Oakland Architectural Club

PRESIDENT.....HART WOOD
VICE-PRESIDENT.....E. B. MEAD
SECRETARY-TREASURER.....W. J. WILKINSON

Directors

JOHN G. HOWARD — LOUIS C. MULLGARDT
OSWALD SPIER — C. E. RICHARDSON

D. H. Burnham & Company

The publishers are in receipt of the following:

We beg to advise that we have severed our connection with Mr. Willis Polk, and have turned over to him our San Francisco office, together with the business which we had there on July 1, 1910. This, however, does not preclude our doing business in San Francisco in the future. We will not maintain an office there for the time being.

Very truly yours,
D. H. Burnham & Co.

San Jose Normal School

(Sacramento Union.)

All the people of the State should be interested in all of its public institutions, even those that are not located in their own vicinity, and there should be a just pride in the fact that this State is rapidly coming to the front as possessing some of the most modern and up-to-date buildings for State uses of any common wealth in the Republic.

The earthquake shook the normal school at San Jose so badly that it was practically destroyed and had to be rebuilt. In rebuilding the state engineer very wisely departed from the architecture of the past, which was ugly and, as it has proven, dangerous; and the result is the construction of a building that is modern in design, in material and thoroughly Californian in scheme and architecture. Those who are acquainted with the university at Palo Alto will easily understand the plan of the new normal. It is a large building of the cloister and corridor style, on the plan of the old missions, of the Western Pacific depots, and of many other buildings to be found in all parts of the State. It is built of reinforced concrete, and The Architect and Engineer, which furnishes in its August issue a very interesting account of the building with photographs and plans, says it is the largest reinforced concrete building in the world.

In the center is a vast court, around which are the corridors, opening out on one side as in the cloisters of the missions. There are one hundred and fifty-five rooms, and the library is arranged to accommodate 40,000 volumes. The building is only two stories high, and there is a tower, but it is of inconsiderable height, so that any future earthquake will not affect it. The entrances, windows and roof are all very charming and artistic, and the school, which used to be anything but an attraction architecturally to San Jose, is now the most artistic building in the town; in fact, one can hardly regret the earthquake which brought such a wonderful improvement.

The cost of the building was only $272,000, which is said to make it the cheapest building, when its actual value is considered, in the State. Every Californian and every visitor to California who goes to San Jose should spend some time in inspecting the school, which is certainly a great credit to the State and to the administration of Governor Gillett and the State Engineer who built it.

Class A Building

Architect William Mooser of San Francisco is preparing plans for a Class A five story basement store and office building for James L. Flood and the Wells Fargo Nevada National bank to be erected in the west side of Montgomery street on the site of the old Nevada block destroyed in the fire of 1906. The building will cost in the neighborhood of $300,000.

Los Angeles Exhibition

The Los Angeles Architectural Club will hold its annual exhibition January 12-25, 1911. The exhibition will be similar to that of last year. The great interest taken by the public was well indicated by the attendance of over 26,000 people during the two weeks, and the resultant benefits have been wide spread to the credit of all those who assisted in its success.

There will be many architects and business men from all parts of the United States to attend the convention of the American Institute of Architects to be held in San Francisco. They have also planned to visit Los Angeles during the exhibition and it is especially desirable that the efforts of the club be supplemented by liberal financial support.

Arthur R. Kelly is chairman of the Exhibition Committee.

It Is Now Architect Lowe

Willis C. Lowe, for a number of years head draftsman for Architect T. Patterson Ross, has been elected a member of San Francisco Chapter of the American Institute of Architects. He also has been granted a license to practice architecture by the California State Board and has established himself in the Marsdon building, 244 Kearny street, San Francisco. Mr. Lowe already has a number of buildings under way, one of them being a hospital at Lomita Park, San Mateo, Cal. He has plans on the boards for a bachelor's apartment house and a large rooming house.

Architect Newman Busy

Architect William A. Newman is one of the few San Francisco architects who has kept his force of draftsmen busy the entire year. Mr. Newman has designed and superintended the erection of nearly a dozen handsome homes in the Bay cities since last January, in addition to apartment houses, flats and store buildings. Plans recently have been finished for a one-story building in Alameda to contain fifteen large stores, and contracts have been let for the construction of a frame flat building in East Oakland for H. Gross at an estimated cost of $15,000.

Newly Certificated Architects

At a meeting of the State Board of Architecture, Southern District, held at the office of Architect F. L. Roehrig in Los Angeles, the following were granted State certificates to practice architecture: Arthur S. Heineman, Union Trust building, and Charles E. Apponyi, 981 E. Fifty-sixth street, both of Los Angeles; Charles Kruegl, 1525 Fourth street, San Diego; Theodore C. Kistner, at present a resident of Granite City, Ill., where he is an established architect, who expects to open an office in Los Angeles in December.

Landscape Architecture

Landscape Architect Wilber D. Cook, Jr., of Los Angeles, has been commissioned to prepare preliminary sketches for beautifying the Secondo Guasti place on West Adams street. The lot is 150 by 500 feet and runs back level from the front for about 285 feet, and then drops about forty feet. The ground will be terraced, the treatment of the grounds being along formal Italian lines to conform with the architecture of the house. Hudson and Munsell are the architects.

Mr. Cook also has been commissioned to lay out four estates at Beverly Hills, near Los Angeles. One in particular is to be a show place. The treatment will be informal, with sunken gardens.

Mr. Cook was the architect of the original Beverly Hills subdivision of 3200 acres. He also has been commissioned to prepare plans for the landscape development of the C. W. Leffingwell, Jr., place at Oak Knoll, Pasadena, Myron Hunt, architect, and for a high class residence subdivision at Lewiston, Montana, for Austin W. Warr, of Lewiston. Mr. Cook has the distinction of being the only Fellow at the present time engaged in active practice on the Pacific Coast, having been admitted to membership in the American Society of Landscape Architects a few months ago. His work submitted to the committee of the society has been placed in Harvard University as a permanent exhibit of landscape architecture.

Designs Wanted for Federal Buildings

A massive equarium for the fisheries bureau, a magnificent state dining room and a comprehensive law library system are among the features of three great department buildings to cost an aggregate of $7,750,000, soon to be erected in Washington under architectural competitions.

The competitions are for the selection of architects of buildings for the departments of state, justice, and commerce and labor, costing, respectively, under the authorizations limiting the expenditures, $2,200,000, $1,900,000 and $3,650,000. The buildings will be erected just south of the treasury building.

The competitions will close December 30, and will be passed on by an expert committee of award. Architects in New York, Washington, Buffalo, San Francisco, Chicago, Philadelphia, Boston, Baltimore, St. Louis, Detroit, Cleveland, Omaha and Columbus will compete.

Engineers and Architects Association

At the November meeting of the Engineers and Architects Association of Southern California, Mr. William Mulholland gave an interesting talk on the provisions being made for developing the artesian flow in the water belt through which the Los Angeles Aqueduct passes. It is stated the development of artesian wells in this territory will reclaim valuable acreages now of a marshy nature and will otherwise have an important bearing on the importance of the aqueduct project. Mr. Mulholland was assisted by Mr. C. H. Lee, hydrographer, and a member of the aqueduct engineering forces. The program was preceded by the usual monthly dinner.

'Tis Frequently This Way

According to the Hollywood Citizen, from which the following paragraph is taken, Contractor Hogg of South Hollywood has discovered the ideal method of drawing plans so that they shall conform in detail and in cost with the completed work, and that without the necessity of making any changes in the drawings. This is the way he does it:

"Mr. and Mrs. S. P. Rhoades are building an artistic annex on the west side of their pleasant home on Monticello avenue. The lady says it is to be a pergola. Mr. Rhoades is of the opinion that it will turn out to be an open air sleeping porch, and Contractor Hogg, who is building it, intimates that it may possibly be a fernery. He says: 'You can't tell until you see the plans. When I get the plans drawn, anyone can tell at a glance what it is. I shall not draw any plans until it is finished. Some builders draw their plans first, but, if you notice, they change them a whole lot. When it is all done I will draw my plans, and it will not be necessary to make any changes. They will all have been made. Then we will know whether it is a pergola or a sewing room.'"

Sacramento Bank Buildings

Sacramento, which is enjoying a season of unprecedented prosperity and building activity, will have at least two magnificent new bank buildings the coming year. The D. O. Mills bank has announced its intention of building an eight or ten story Class A structure and it is understood the plans are now being prepared by Architects Bliss & Faville of San Francisco. The Farmers and Mechanics Bank, the name of which is to be changed to the Guarantee Title & Trust Company, will also put up a modern banking structure of five or more stories. A number of architects have submitted sketches for this building, among them being Charles S. Kaiser of San Francisco, who was formerly with Architect Henry Schulze and who is a young architect of recognized ability. Both buildings will represent an outlay of close to half a million dollars.

September, '09, Copy Wanted

We have several calls for the September, 1909, Architect and Engineer. Twenty-five cents will be paid for one or more copies of this issue.

Competition for Small Houses

In connection with its permanent exhibition of building materials on the second floor of the Builders' Exchange, 30-34 West Thirty-third street, New York City, the Building Trades Employers' Association announces an architectural competition. Designs are asked for a four-room house, to cost not more than $2,500, and for an eight-room house, to cost not more than $4,500. Walls may be of concrete block or of terra cotta block, in either case to be finished in cement stucco; or of hollow concrete block, plain, paneled or bush-hammered; or of monolithic construction; or stucco on lath.

As there are two classes, six prizes will be awarded—First prize, first class, $100; second class, $150. Second prize, first class, $50; second class, $75. Third prize, first class, $30; second class, $50.

By addressing the Association, full terms of the competition may be obtained. The prize-winning designs will be used in the construction of models which will be made a permanent exhibit.

Oakland Architectural Club

One of the latest architectural organizations to come into existence and one which seems to show much promise is the Oakland Architectural Club. The administration of the same will be along lines similar to other such clubs on the coast, including class work, exhibitions, etc. Oakland appears to offer a good field, owing to considerable architectural activity, and the support as tendered the club assures its success. The officers as elected are: President, Hart Wood; Vice-President, E. B. Mead; Secretary-Treasurer, W. J. Wilkinson; Directors, John Galen Howard, Louis C. Mulgardt, Oswald Spier and C. E. Richardson.

Municipal Building

Architects Wright, Rushforth & Cahill of San Francisco are preparing working drawings for a six-story reinforced concrete building, 200 by 175 feet to be erected on the south side of Market street, between Seventh and Eighth streets, for the temporary use of the San Francisco municipal officers. The building will be designed so it can be thrown into a hotel upon completion of a permanent municipal building. The city is to pay something over $5,000 a month rental for use of the building. The structure will probably cost $350,000.

Personal

Architects John C. Austin and W. C. Pennell of Los Angeles have formed a partnership and all work done in the office in the future will be in both names as associates.

Architects Welsh & Carey announce the removal of their offices from the Mills building to the seventh floor of the Metropolis Bank building, Market and New Montgomery streets, San Francisco.

Architect Albert Held of Spokane, Wash., announces the removal of his office from the Hyde block to No. 816-821 Realty building.

California Materials for California Buildings

The permanent exhibition of the structural and industrial materials of the State of California that State Mineralogist Lewis E. Aubury has arranged for, having in view a practical lesson in the promotion of home industry, is progressing toward the stage of actual installation in the Ferry building, at the foot of Market street, San Francisco. In this exhibition all counties that have structural or industrial materials of mineral origin in their borders will be invited to take part. The show is for the purpose of upbuilding California. It will be in the building through which more persons pass daily than in any other in California. It is the most accessible place in San Francisco, being at a point reached by all the car lines and where nearly all overland travel west bound and the greater part of the travel east bound converges. For this reason the exhibition will be seen by hundreds of thousands of visitors every year. It will be where architects and owners of realty and public officials and all others interested in building construction can reach it with the minimum of exertion and with the greatest economy of time.

Preliminary to the actual installation the State Mineralogist has sent a representative, Mr. W. W. Thayer, to Southern California to talk the matter over with those directly interested as producers. This representative has visited all central points in the southern part of the State and will now call upon and talk with producers in the central and northern portions of California. Producers are showing a lively interest in the exhibit that promises to accomplish large benefits for the State.

The architectural details of a handsome facade that have been worked out show that the exhibition will be finely installed. This part of the work has been undertaken by the manufacturers of terra cotta, acting in conjunction with an architect. The importance of promoting interest in the exhibition in every possible way is illustrated by the statement that, in a period of twenty-three years the production of structural and industrial materials of the State, of mineral origin has represented a market value of $111,082,970 and this great sum represents a score of active branches of a great local industry.

First Gobbler — What does our census of 1910 indicate?

Second Gobbler — That the death rate will be largest in November.

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PROTECT OUR FORESTS

The matter of protecting our National forests from the ravages of fire is becoming a serious one. The appalling destruction of timber in the Pacific Northwest the past summer has aroused State and National sentiment and should result in some definite plan of action to prevent further losses. One plan is to have the regular government troops co-operate with the Forest Service during the months of May, June, July, August and September, in protecting the forests.

A systematic campaign of fire protection should be inaugurated and carried out by the troops. By placing sentries on the promontories overlooking the timbered area supplied with telephone communication, any information of incipient fires could be quickly transmitted. The troops could materially assist the forest service in cutting fire trails and making accessible every portion of the national forests and also maintaining a thorough and efficient patrol system. The greatest value of patrol is necessarily along traveled routes, railroad, etc. There are at present about 25,000 soldiers at the different army posts. If half of the men were assigned annually for forest duty it would practically mean the end of disastrous fires in the national forests. Lightning is one of the most serious fire menaces to be combated. There are in the states of Montana, Idaho, Washington, Oregon and California 1800 forest service men. These are a mere handful covering the immense scope of territory, and this force must be augmented if results are to be achieved. The forest service has performed its function admirably, with the limited money and men at its disposal, but its efforts should be supplemented by the regular army.

WHY SO LITTLE FIRE PROOF CONSTRUCTION?

Truly, the "Conservation Congress" will be doing good work if it can get us to take such precautions as will render forest fires less frequent and less disastrous, and we can if we only want to. But it can also do good work if it will direct our national attention to another fire loss, not of a natural resource that was given to us, inherited, found, gotten without labor, but one that we've acquired by hard work, huge expense, and patient building, OUR CITIES! A fire loss that is entirely attributable to our continued stupidity and ignorance and that instead of attempting to decrease we are so doing as to guarantee, assure, its continuance and increase. There's a screw loose somewhere in our National intelligence.

To date, this half year, we've done $514,000,000 worth of new buildings and repairs. That looks good and prosperous and progressive, it means approximately $1,000,000,000 of construction for the year.

But look upon the reverse of the picture. If nothing extraordinary happens, no abnormal conflagration (the Baltimore and San Francisco fires were but two years apart) our year's fires will total up about 1,700 people burned, 165,000 buildings, $280,000,000 worth of property! The insurance companies recoup us in small part for this loss but we pay them $3.00 in premiums for every dollar we get out of them, and then our fire departments, water supply, and such items cost us $300,000,000 more, in fine, a net loss or cost of $564,000,000 for FIRE. If the billion dollars expended in new buildings means progress, this terrific loss represents retrogression, asinine folly, crass stupidity.

Spite of such figures, the awful lessons of Baltimore and San Francisco, that should still be fresh in mind, the disastrous fires we daily witness and all that, this is what we are doing in fire prevention.

In all the new building done this year only in 14 per cent of it has any effort at all been made at fireproofing, and of that 96 per cent of it is ineffective, abortive, in that in almost every case though some parts of the building were well done, some silly little thing was neglected that jeopardizes the whole structure. Like a chain, a fireproof building is only as strong as its weakest link. And the most extraordinary part of it all is that very slight if any additional cost would have made those buildings splendidly fire-resisting. Further, think of it, in this year of Grace, in this splendid country, where we have incombustible materials at lowest cost and where we claim that most people are superlatively intelligent, over 61 per cent of all new building done was of wood, actual fire-traps, tinder boxes, fresh fuel for fire.

We are forced to the conclusion that our architects, as a class, don't know how to build well; the insurance people are not really anxious for good building—conflagrations hurt them, but ordinary fires are profitable to them; our cities are afraid to pass too stringent laws COMPELLING good construction and our people are so accustomed to second and third rate buildings, kindling wood affairs, that they really have the notion that that is the way to build, and there you are.

Practically, the cure rests with the individual investor, with the business world and with our city administration. One might go back still farther and assert that it rests with the people as a whole, but that is hardly a prudent way to put it for if the people ever saw with any vividness the heavy tax which our flimsy construction places upon each and every one of them, we might have mobs and barricades in the streets until the stupid misrule of the jerry builders was brought to a summary end.

HEATING AND LIGHTING

Plumbing and Electrical Work

A Scheme for Facilitating the Heating and Ventilation of School Rooms

A unique arrangement designed to increase the effectiveness of heating and ventilating apparatus in such apartments as school rooms is illustrated in the accompanying sketches, in which it will be noted that the idea involves the use of a suspended ceiling of glass hung above the pupils' heads. The scheme was presented at the recent meeting of the heating engineers' society in St. Louis by Francis W. McGuire, of Rockford, Ill., by whom it was developed. In describing the idea, Mr. McGuire says:

"The principal benefit to be derived from the suspended ceiling is that it introduces the fresh air at or nearest the breathing line, and distributes it equally from the point of its introduction into the room. Thus the air does not travel to the upper part of the room first and there become contaminated by the foulness of the ceiling caused by the settlings on the ceiling. The impurities that may accumulate in the air are either forced to the floor line or are carried to the top of the room by way of the space alongside of the walls, as either of their weights may determine, thereby giving a pure stratum of air at or nearest the breathing line.

The benefits from a heating standpoint are that the warm air is forced to the sides of the room first, and in this way warms the air near the windows and walls.

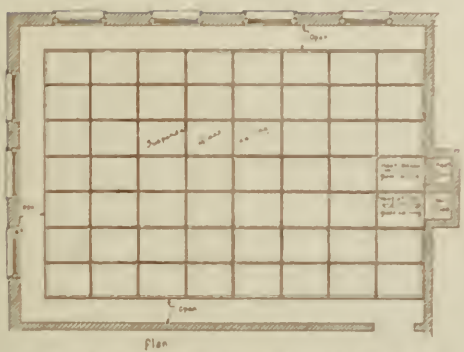
In the discussion of Mr. McGuire's idea, Secretary W. M. Mackay stated that such a construction would not comply with the State laws which call for a 12 to 13 foot ceiling, that the space above would be considered dead space, and that the ventilation into the same flue would interfere with the lower ventilation.

Mr. McGuire holds that it would hardly violate the State laws, as the height of the room remains 12 to 13 feet, that the space above is not dead space, inasmuch as the cooling surface of the windows and outside wall are the prime factors in air movements and the small opening in the vent flue in the upper portion of the room only tends to stimulate the otherwise sluggish movement from the lower section of the flue.

Appearance of School Room with Suspended Glass Ceiling

Another speaker stated that the upper surface of the suspended ceiling would gather dust from the sweeping of the room. Mr. McGuire holds that this is one of the good features of the arrangement, inasmuch as it shows that the dust, if in the room, remains there, either at the ceiling or floor line, or both, and if this arrangement will collect the dust (each panel of glass being removable) it would necessitate the frequent cleaning or washing of the surface and by so doing would remove some of the impurities that would otherwise remain in the room.

Prof. J. H. Kinealy stated that in ordinary constructions, with a proper size of flue and a sufficient amount of heat, it is possible to heat a school room



Plan

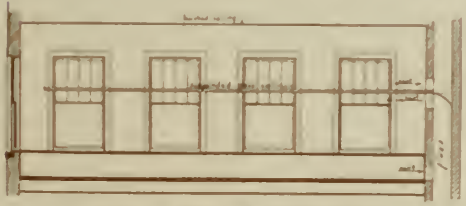
Plan of School Room Showing Suspended Ceiling

so that there will not be more than two degrees difference in any part of the occupied room.

"Allowing this to be true," says Mr McGuire, "which is unusual and very seldom accomplished, it refers to heating only, and we all know a room can be satisfactorily heated. But is it not a fact that any impurities that have accumulated in any part of the room or clothing of the occupants will settle down by gravity all through the breathing space or rise upward the same way, and are, therefore, always present in the breathing space? This is the principal fault of heating systems, and was not this the principal reason for the elimination of direct radiation?"

Thoughts on Ventilation

WE notice in a Middle West journal a vigorous protest against illy ventilated school rooms. It seems to be the outcry of a school teacher delivered before the furnace manufacturers, lately assembled in the city of Chicago. The speaker's main condemnation was not because a furnace was used but, as we read, because the flues to carry off the expired air were at the ceiling. For many years there has been a great difference among professors of ventilation whether the outlets for used air should be at the ceiling or at the floor. We never could understand the sense of allowing the air to be passed out at the floor level. Foul air should be drawn off at the ceiling. To draw foul air off at the floor level is an absurdity, and to attempt it is contrary to natural laws of



Sectional View of School Room (Suspended Ceiling)

atmospheric pressure. Air that has once been breathed and exhaled from the body is, we may say, the highest in temperature of the air in the room, and to expel that air from the room it must be drawn downward and in its passage downward passes the nose and mouth and is again breathed over and the person naturally inhales a large quantity of foul air that has been once inhaled.

Air flues provided for the passage of air, whether before or after being breathed, should be of good size and as straight and direct as possible, for if they are long and tortuous it is difficult to keep them clean. We hardly know of a subject in which there are such widely different opinions as on the matter of ventilation.

A majority of English authorities are in favor of natural ventilation. Robert Boyle, long considered an authority on ventilation, states that a number of small inlets fixed around the walls about five feet nine inches high above the floor insures the best distribution. The air should pass directly through the walls by means of tubes and be delivered upward at a velocity not exceeding two feet per second. But open windows should not be used in cold weather. Foul air should be drawn out at the ceiling.

Mr Boyle favors the withdrawal of foul air at the ceiling and does not favor open fire places because it interferes with the ventilating apparatus. A majority of writer on ventilation, however, strongly favor their use. It must be admitted that in an ordinary family room, nothing adds so much to the comfort of a sitting room as an open fire place, for in nearly every instance there is a strata of cold air at the floor level that is very uncomfortable, and is best withdrawn by and through an open fireplace. Other experts, or at least those who claim to be such, strongly favor the plenum system; that is, directing a strong current of air into the room, and they go so far as to advocate the closing of all windows, and it is also claimed that the air can be cleaned and regulated in every way. But the system is strongly condemned by hospital authorities.

In a book entitled "Hospitals and Asylums of the World," Mr. Charles Burdett, who is well informed on the subject whereof he speaks, makes the following statements: "At Guy's Hospital, London, there is an elaborate system of ventilation. The fresh air is taken in at the tops of two towers and drawn to the basement, where it is warmed and sent to the wards and admitted at the floor level, and the foul air is extracted at the ceiling level and drawn off through shafts to the top of a lofty tower by means of heat. The system, however, has been anything but a success, and in the report of Dr. Bristowe and Mr. Holmes it is said to be condemned unanimously by the medical staff, which finds it utterly inefficient, and regards the

wards thus provided as the least healthy in the hospital, while it is said that the new wards, which are ventilated naturally, have a satisfactory air supply. The York County Hospital (England) is an institution provided with a system of mechanical ventilation by impulsion of fresh air and exhaust by extraction. The history of this hospital is a marked example of the failure of artificial ventilation. A mechanical system was installed, but the report states the wards were always close and sickly and even offensive. While the patients complained of the deprivation of fresh air, the medical staff also complained of the state of the hospital. Worse than this, the health of the patients was impaired, especially those who were submitted to any operation, however slight. In a word, the hospital constantly grew worse until the surgeons abandoned operations of all kinds rather than incur the almost certain risk of a fatal termination, and finally the hospital had to be emptied and cleansed, and the elaborate mechanical apparatus abandoned. Since that time erysipelas as a hospital disease has disappeared and surgical operations do well. A natural system of ventilation was adopted in this hospital

It is also stated that extraction of foul air by heated high shafts was found to be no more efficacious.

From a reading of the above one is led to think that the accounts are very contradictory. But there are some fixed facts, as the proper place for outlets for extractions of foul air is undoubtedly at the ceiling, for air once exhaled is loaded with impurities and from its high temperature it rises to the ceiling, and if the outlet is at or near the floor level the air loaded with poisonous impurities passes down and is again breathed in passing the nose and mouth of patients.

Another matter that happens with mechanical ventilation is that a current of fresh air injected into a room is very apt to have such power and force imparted to it that it simply ploughs a channel through the body of the air in the room toward the several outlets provided for the outgo of the foul air, and the currents of fresh air fail to be properly diffused throughout the main body of air in the room. In this respect Mr. Boyles' advice is correct as to the air inlets before mentioned.

Ventilation

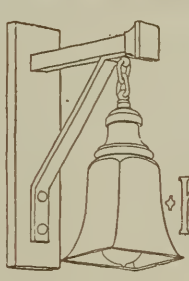
The last paragraph of an article under the above heading, written by P. Abrahamson, was unintentionally omitted in the October number of the Architect and Engineer. The omission was one of those inexplainable errors that will crop into a publication now and then, no matter how carefully edited. The concluding paragraphs of the article are given herewith:

It is understood that air in rooms to be kept comparatively pure, must be changed constantly, the object being to prevent certain effects caused by breathing vitiated air such as listlessness, drowsiness and sick headaches.

A person should be as particular with the air they breathe as the water they drink. About two-thirds of the total death rate are from diseases of the house, that is to say that two-thirds of the people who die are carried off after suffering more or less prolonged and always distressing diseases from the effects of breathing the foul air of imperfectly ventilated houses.

A Hospital Without a Bath Tub

A hospital without a single bath tub, that is the forward step in sanitary construction which is announced for the great hospital building which the Harriman lines are now erecting in Houston, Texas, at a cost of nearly half a million dollars. In the place of tubs, numerous shower baths have been provided and it is claimed this is done in the interest of both the physi-



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cians and the patients. It is pointed out that frequently a patient can not be moved from his cot or is too weak to be placed in a tub, but that he can be rolled under a shower and given his daily bath in comfort. The physicians and surgeons claim it is much more convenient for them to step under the shower than to be compelled to use the old fashioned tubs and in these days of advanced surgery the physicians must be as thoroughly sterilized as their instruments. The big tub with its broad surface and many pipes is also held to be much more unsanitary than the shower bath with its flush of running water and simple equipment.

Government Specifications for Plumbing Fixtures

There has been issued recently from the government printing office at Washington specifications for plumbing fixtures, etc., prepared by the Board of Uniform Plumbing Specifications for the Treasury, War and Navy departments.

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The Relation of the Architect to the Illuminating Engineer.

By GEORGE PUGH SMITH

ILLUMINATING engineering is aiming to do more than merely furnish an adequate number of foot-candles to properly illumine a given space—it is aiming, as I understand it, to increase human comfort through the proper combining of light and common-sense by making the places illuminated more pleasant to live and do business in.

Necessarily—and here I repeat what I said before—if illuminating engineering is to achieve more than a passing success it must take into consideration harmony, color and the basic principles of applied design. For, unless these points are made one in the application of the new science, how is it to achieve results which will do more than furnish just the right amount of light for the case in hand? No rational man will maintain that simply lighting a space accurately affords sufficient ground for a science to stand upon; it must with its proper amount of light give the proper fixtures, and to do this it must understand how the harmonizing designs are worked out. If these points are essential, how is the engineer to obtain the necessary knowledge of them if not by constant study of the best which has been and of the best which is, with reference to architecture and its kindred arts. In other words, how do you expect to apply what you know to be necessary to change an ugly spot into a place of beauty unless you understand the principles of constructional design?

Again, how do you expect to designate the fixtures, which may be a part of the decoration of a "period" room, unless you know the particular style of decoration germane to that particular period? While I—and I believe all men interested in better decoration—abhor the "epoch" idea, still, in order that we may not commit anachronisms, we must study the works of those who have gone before.

Granting that all periods are composite, it follows as a sequence that we must understand not only one particular epoch, but the single ideas and the ideals which called it into being.

To whom shall we turn to get at these very necessary points?

The architect is the logical person, since in his studies he will have thoroughly familiarized himself with design and style since time began, and in his files will be found data, drawings, photographs and the like which will have material bearing on the subject in hand.

The idea, then, is to associate ourselves with the architect, so that he will consider us as much an essential to his whole as he does his experts on fireproofing, concrete and structural iron.

The question next arising is, "How are we to accomplish this association?"

In the first place I should advise that where possible the illuminating engineer

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make application to the local architects' society or club. He will, in all probability, be rebuffed unless he has had a talk with a number of the more prominent architects beforehand and explained to them that by such an association his knowledge of what is proper in lighting would be enhanced and his technical knowledge would be of inestimable advantage to them in any event. Again, the illuminating engineer is usually one to fifty in proportion to the architects of a given community, and in such a case there should be a warm reception awaiting him at the hands of the architects.

Outside of the great metropolitan centers the illuminating engineer is more a myth than a reality, for as yet there are so few men devoting their time and energies to illumination that the smaller communities know little or nothing of them, and will naturally be a little backward about acknowledging them and giving them recognition. It is to just this class of illuminating engineers, those whose profession is carried on in the smaller cities, that I want to make the following suggestions, for they more than those of their co-workers in larger fields need the assistance which every little bit of artistic and practical knowledge can give them. They will have the hardest time making their science recognized by the architects, since these latter men will know less of its aims, achievements, ideals and causes than do the architects of the great cities.

To these latter illuminating engineers I would strongly advise that they make it a point to meet and know personally every architect in their community; that they go to each and ask questions, show interest in the work of each, and ask for suggestions. An architect is a man who takes pride in his work and who is striving to make it individual—as a consequence he will grasp at a chance for enhancing that individuality when he is convinced that the chance is a good one. And who is there to say that by a better selection of fixtures and a better arrangement of lights the work of the architect will not be improved?

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Another way: In every city I have visited there is a public library, in each of these collections there will be found books and copies of famous paintings in which will be found ideas galore of fixtures for lighting purposes. Study them. Learn the different styles peculiar to the different periods and the reason for each. Make sketches of your own along the lines in the pictures; then have the fixture man's artist work them up, or suggest them to the architect with the idea that they will be better for both parties concerned in their modified form because they will be called upon to bear modern light sources and to answer modern illumination and decoration questions.

If there is to be a decorator in the work you have in hand have a talk with him. He knows, or should know, what is right, and you could do no better than keep in touch with him.

Above all things I say to illuminating engineers, unless you have studied proportion, design and ornament do not attempt to specify fixtures. Take your plans to your architect and ask his advice. Don't be ashamed to go to such a man, for remember he has put in a lifetime of hard study on these three points. You can not expect to know what he knows unless you study, study, study—proportion, balance, line, color, ornament and their application. These are as essential to your success as are your formulae for computing an installed illumination. The more you learn of these essentials to modern architecture the more you will be a success in your own line.

Therefore, let me repeat what I have said, and let me urge upon every man who preaches the gospel of better light to take care of what he does and to take care of what he avoids in specifying his fixtures. A working knowledge of balance, line, harmony, application, building and their kindred arts is absolutely essential to your success as an illuminating engineer, for your work is dependent upon them, as is the bettering of their work dependent upon you.

Therefore, get into close touch with the architect by making him understand that you want to meet him upon his own ground by absorbing his ideas, by showing an interest in his work, by acting upon his advice.

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By the Way

Some Industrial Information Worth the While

Attractive Features at New York's First Big Cement Show

Special attractions are announced by the management for visitors to the Cement Show which is to be held in Madison Square Garden, New York City, December 14-20, 1910. For the first time, the Edison poured house will be in evidence. Mr. Edison's prominence as an inventor and his activity in the Portland cement industry make his announcement that a complete concrete house can be poured at one operation one of unusual interest. Mr. Edison will personally install and supervise the exhibit at the show. The house to be shown, together with the molds, will be about 25 by 30 feet and is to be built for $1,200 in gross lots. There is considerable ornamentation on the exterior, but the whole house is to be poured in six hours. The chief part of the invention is Mr. Edison's concrete mixture, which is reported to flow like water, holding the aggregates in suspension and securing a uniform distribution of the concrete throughout the molds. This apparent overcoming of the laws of gravity will be of unusual interest to concrete men all over the world. The completed house and the molds in which it has been cast will both be exhibited at Madison Square.

Of almost equal interest to the student of concrete industrial construction will be the exhibition of the gold medal concrete cottage, prize winner in the competition held by the Anti-Tuberculosis Congress last year. The cottage is a sanitary, inexpensive home for a workingman, designed by Milton Dana Morrill, Washington, D. C., and was illustrated in the Architect and Engineer some months ago.

The cottage in question is two stories high, built of reinforced concrete and contains five rooms. Under specifications, one car load of Portland cement is sufficient for such a house.

Outfits for Private Garages

In these days of the automobile, architects who are called upon to design fine homes usually are expected to plan an up-to-date private garage as a necessary part of the home equipment. To have these buildings up to date, the man who plans them must keep himself posted.

One of the conveniences which every owner likes in his garage is a gasoline storage outfit that requires no measuring or funnels and is at the same time proof against fire, evaporation and leakage. With the Bowser outfit you pump the gasoline directly into the car without exposure or possibility of explosion. All styles, sizes and prices prevail and detailed information will be supplied upon receipt of a postal card to the Western Sales Office, 612 Howard street, San Francisco.

Bricklayers vs. Concrete Workers

Eight bricklayers quit work on the new building of the People's Savings Bank in Sacramento because concrete workers, who are paid $3 a day, were employed upon work which the bricklayers, who are paid $7 a day, claim as belonging to their trade.

Southern Pacific Co.'s New Depot, Tulare, Cal. D. J. Patterson, Architect

THIS cut shows the new depot now being built at Tulare and which is being faced with **"Golden Gate Sandstone" Brick** made of sand and lime at our **Antioch** factory. We also sold the Del Monte (white Monterey) sand, red brick and crushed rock for this building. ***Do you ever buy sand, rock or gravel in car load lots?*** If you need any sand, rock or gravel for any interior points such as Tulare, Fresno, Sacramento, Richmond, etc., let us quote you and submit samples, for we can not only ship from our Antioch pit but we are able to supply you from a pit in the San Joaquin Valley as well as a convenient point in the Sacramento Valley.
GOLDEN GATE BRICK CO., C. F. PRATT, Manager, **660 Market St.,** Opposite Palace Hotel.

The point at issue was whether the concrete should be poured into the space between the concrete wall and terra cotta facing by concrete workers or by bricklayers. Superintendent J. S. Connell of the Thompson-Starrett Company declared that it is an unheard-of thing for the bricklayers to insist upon doing the work which was clearly a part of the trade of a concrete worker.

The bricklayers, on the other hand, insisted that it was a bricklayer's job. Rather than delay the work, the Starrett company finally acceded to the demands of the bricklayers, although it cost the company quite a little more.

The work of pouring in a layer of concrete between the concrete wall and the terra cotta surface cost $4 a day more for every workman employed upon it, when done by bricklayers.

"Popping" Lime

The Editor The Architect and Engineer:

I understand there have been quite a few cases in San Francisco of late where plastering has blistered soon after application. Is this "popping" or blistering due to a poor brand of lime or to the method of application? Is there a remedy for it?

ARCHITECT.

As Cowell lime is known to have been used in a number of cases where the plastering "popped" the manufacturers of this product were asked for an explanation and the following reply from Secretary George of the Cowell Lime & Cement Company will be found of interest:

"Replying to yours of the 18th inst., beg to say that sometimes lime used in plastering will blister or as it is commonly called "pop." There are many causes which lead to this. The contractor may burn the lime in slacking it, he may forget to screen it; he may not leave it sufficient time in the mortar pile, which should not be less than two weeks, or he may be careless in allowing unslacked portions of lime to get into the mortar pile. On the other hand lime quarries never run uniformly, and there may be times when the manufacturer may run into streaks in his quarry where the lime will not all burn uniformly and will cause this trouble. Recently there have been a few jobs in San Francisco which have shown this blistering. After the material is on the walls and this occurs it is pretty hard to trace it back and find out whose fault it is."

Bank Vaults and Equipment

One of the finest installations of fire and burglar proof vaults on the Pacific Coast recently has been completed in the First National Bank building, San Jose, by the M. G. West Company, Western sales agents of the Mosler Safe Company, with headquarters at 353 Market street, San Francisco. The equipment includes besides the massive vaults, doors and security safes, a line of steel safe deposit boxes, steel filing cases and omnibuses, the entire installation being nearly a duplicate of the fixtures in the First National Bank of Boston, pronounced at the time they were put in second to none in the country.

The San Jose installation was made under the personal supervision of Ross R. West, engineer, and E. J. Reed, the company's expert mechanician. Besides bank installations special attention is paid by the West company to vault equipments for court houses and halls of record. New offices and salesrooms recently have been leased by the company at 353 Market street, where a large stock is kept on hand for customers who do not care to wait for "made-to-order" goods.

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To few firms does San Francisco owe more for the great reconstruction of its beautiful city than the contracting firm of Foster & Vogt, who have built some of the largest and finest structures in San Francisco that have been erected since the great fire of 1906. Their specialty is concrete construction.

Foster & Vogt began operations in San Francisco in 1906. Mr. Foster is an old resident of San Francisco and has long been recognized as one of its foremost builders. Contracts involving over three-quarters of a million dollars have been filled in the past four years. The firm has just completed its contract on the new City and County hospital, which is credited with being one of the most modern and up-to-date municipal buildings of its kind in the country. Work was started on this structure January 1, 1910, and completed about August 1st. Over three million feet of lumber were required for the concrete forms and seventy-five men were employed. The concrete work on the Lakeview school, the Winfield Scott school, Commercial High and some of the largest office buildings stand as a credit to the excellence of the work of this firm. Foster & Vogt have their offices in the Mechanics Savings Bank building.

Portola Marble

The Portola marble which the Columbia Marble Company of San Francisco is quarrying is being specified quite extensively by architects all over the State. Those who have used it are highly pleased with the results. The marble is particularly well adapted to bank interiors, hotel corridors and entrance vestibules. The color—a delicate buff—is highly decorative and little else is needed in a banking room to set it off properly. Portola marble is a California product and in many respects is considered superior to the genuine importations. For full particulars address the Columbia Marble Company, San Francisco. Samples will be mailed on request.

White Brothers' New Salesman

White Brothers, the pioneer hardwood lumber dealers of Fifth and Brannan streets, San Francisco, have sent a new salesman out on the road in the person of Robert A. Birmingham. Mr. Birmingham for a number of years has been inside salesman for this house and has a very intimate knowledge of the hardwood business and is already well and favorably known to the trade. Mr. Birmingham is a native of Bridgeport, Conn. He is a graduate of the College of the City of New York and has lived on this coast for about ten years, during practically all of which time he has been in White Brothers' employ. He is an athlete of no mean ability, having attained high honors in both baseball and football.

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Looks Like We Are All Crazy

Man drinks whisky and that clogs the valves; he drinks beer and that clogs the wheels; he pours down lemonade, ginger ale, buttermilk, ice water, tea, coffee, and what not, and then wonders why the fires under the boilers do not burn. If you should take an ox and put him through a like performance he would be dead in a month. The simplest and plainest laws of health are outraged every hour of the day by the average man. Did Adam smoke? Did Eve wear corsets? Did Solomon chew tobacco? Did Ruth chew gum? Did the children of Israel make for a beer garden after crossing the Red Sea? Did Rebecca eat gum drops, chocolate bon-bons and ice cream and call for soda water? Adam was the first and was made perfect from head to heel—how long would he remain so after eating a mince pie before going to bed? Suppose he had slept in a bedroom 5 x 7 with the windows down, the doors shut and two dogs under the bed? Suppose Eve had laced up into a corset, wore tight shoes with French heels, hobble fig leaf skirts, tub hats and sat up all hours of the night eating chicken salad and Welsh rarebits and trying to keep on four pounds of dead people's hair? Guess we are all a little bit locoed.—Mountain View Register.

"Blanc" Stainless Cement

In these days of so much concrete construction architects are continually looking about for materials that will make an attractive exterior treatment. There are a number of cements on the market giving excellent satisfaction. One of these only recently has been heard of on the Pacific Coast, in fact, up to a couple of months ago no attempt had been made by the manufacturers to push the sale of its goods out here. The product is known as "Blanc," meaning white, and its uses, so its manufacturers claim, are as multitudinous as the sun's rays. While "Blanc" is strictly a white Portland cement and will remain white for all time, though it is possible to color it by adding coloring matter, so that a variety of pleasing effects may be obtained if desired. The company having made a reputation at home, is now seeking a wider field and undoubtedly it will find the Pacific Coast respondent to its campaign for business. The factory and main offices of the Blanc Stainless Cement Company are in Allentown, Lehigh County, Pa.

Book Reviews

"History of the Telephone" is a handsome cloth bound book which gives an account of the struggles of Inventor Bell in interesting the public in the telephone—how he spent weeks and months in inventing and perfecting the instrument and with what ridicule it was received by the press and the people in general.

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The story is intensely interesting and the reader is as loath to lay the book down as he is to pause in the perusal of a popular novel.

A. C. McClurg & Co. of Chicago, are the publishers, and the price of the volume is $1.50.

Home Industry of Note

The Roebling Construction Company is manufacturing expanded metal lath in San Francisco, and has today the largest, most complete and active plant for the manufacture of expanded metal lath west of Chicago. They manufacture all gauges from No. 28 to No. 23 inclusive, in plain black, asbestos dipped or galvanized. A notable point favorable in the use of this lath is the fact that the Roebling expanded metal lath is manufactured in widths of 25 and 33 inches and put up in rolls of 150 feet long. The 25-inch width is used on 12-inch centers, and the 33-inch width is used on 16-inch centers; the lap meeting on the stud only. Between the centers of the stud, it is free from all laps, leaving a smooth surface for the plaster.

In addition to the manufacture of expanded metal lath for interior plastering, the company manufactures a crimped self-furring lath and wire cloth for exterior plastering of buildings. By using Roebling self-furring expanded lath or wire cloth, the expense of striping the outside of the building is done away with. The "V" crimped every five inches in the lath offsets the main surface from the sheathing board, so that it gives a perfect key and bond for the plaster, a condition that architects have looked forward to for some time with regard to exterior plastering. Gauge for gauge, there is said to be nothing better manufactured in expanded metal lath today. The capacity of the plant allows the company to fill large orders promptly.

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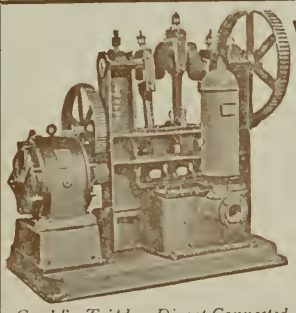

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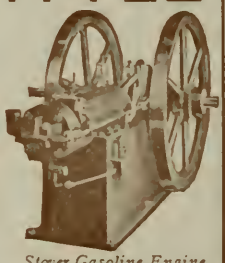

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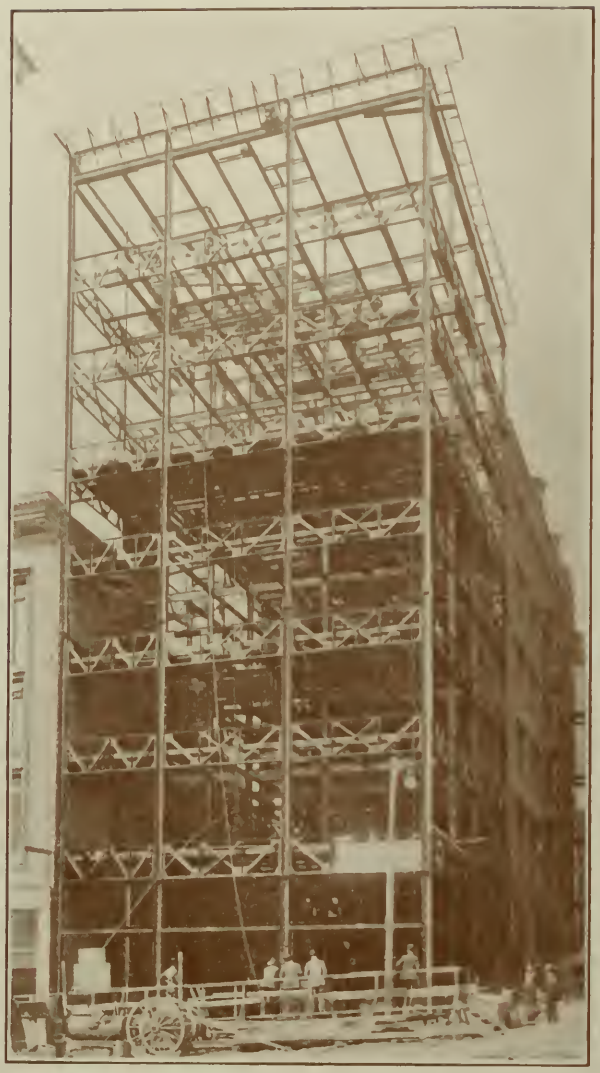

Steel Frame of Grant Avenue Hotel, San Francisco

Fine Steel Frame For Class A Hotel

One of the new and attractive Class A buildings at present under construction in San Francisco is the Grant Avenue hotel on the southwest corner of Grant avenue and Harlan place, owned by O. D. Baldwin and designed by Architect T. Patterson Ross and A. W. Burgren, engineer. The building is to have a handsome exterior finish of white Medusa cement with Del Monte white sand. The steel frame was furnished and erected by the Mortenson Construction Company, structural steel contractors. They have one of the largest and best equipped plants in San Francisco, the location at 19th and Indiana streets being in close proximity to the Santa Fe and Southern Pacific railroads, thus affording splendid transportation facilities.

The Mortenson Construction Company started in business immediately after the big fire of 1906. The company's personnel includes H. Mortenson, president, who, before the fire, was manager for Varney & Green, outdoor advertisers, and Chas. G. Mortenson, vice-president and manager, who for over twenty years had charge of the structural steel and bridge department of Judson Manufacturing Company of Oakland.

Although in operation but a short time,

the company has succeeded in building up a fine business and has established a reputation for good workmanship and square dealing.

Its splendidly equipped, modern plant at the corner of 19th and Indiana streets, and the extensive stock of material always carried on hand, enables it to undertake and satisfactorily execute any contract in its line.

The company has furnished and erected the structural steel for a number of buildings in San Francisco as well as outside of the city, one of the last ones being the steel frame for the eight-story hotel building for Mr O D Baldwin, already referred to

An Attractive Store Front—A Client Maker

It is an accepted fact that every human mind is favorably inclined to receive a suggestion Such statement is particularly applicable to the architect who is ever ready to receive an effective and profitable hint, for the progressive member of that profession believes "what was well enough for yesterday is poor enough today."

About four years ago Francis J Plym, a young, brilliant and progressive architect of Kansas City, in designing commercial buildings, realized the fact, whilst the manufacturers of building materials were rapidly developing new ideas for that class of structures, nevertheless there had not been offered to his profession a modern method of glass setting for store fronts and he, like scores of other architects, was forced to accept the antiquated manner of setting plate glass Added thereto, the merchant client was calling for a glass setting that would give a greater exposure of plate glass, with lower insurance, and a store front wherein they could display their goods as attractively in winter as in summer without being annoyed by frost, sweat and dust.

Mr. Plym, becoming restless and impatient for the introduction of some sort of system to supply the requirements of his clients, began to experiment with various models and materials, until he at last evolved an idea, crude as it was at first, to be afterwards so architecturally and mechanically improved as to attract the attention of his professional brethren. Following in quick succession, came the patents and the organization of the Kawneer Manufacturing Company—the name originating from near the Kaw (river) or "Kawneer" The immediate endorsement of that system of store front construction by the architectural profession, forced the company to look for a location which would provide better manufacturing and shipping facilities Such was secured at Niles, Michigan—two hours' ride from Chicago—and along the tracks of the New York-Chicago railroads When one reads that a million and a half lineal feet of Kawneer materials were installed last year, it is easy to understand why so many alleged rival glass settings are flooding the commercial field with the weakly plaint, "just as good as Kawneer" In brief, the Kawneer system of store front construction provides the largest exposure of glass, with the narrowest setting (bars) consistent with strength and durability; its cushion friction grip secures a reduction of plate glass

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insurance from 40 to 60 per cent over any other plan of setting; by its ventilating system it is frost, sweat and dust proof and makes window cleaning easy; it is paintless—made of copper, brass, aluminum, gun metal, statuary copper and bronze—and as a salesman the most prominent merchants say it is a "business getter" producing 75 per cent of the sales.

The architects who have designed stores and store front construction, declare that a well planned store and store front renders good fees for the time required in the execution of the plans; that specifying the Kawneer system for a class "A" commercial store front is not only highly satisfactory to their clients, but that the Kawneer has proved an advertiser and "client getter" for much more profitable employment.

Kawneer settings recently have been installed in the following San Francisco buildings: Whitney building, Baldwin Jewelry Company, Chamberlin building, and the Spreckels building at Third and Stevenson streets.

Successful Steel Erectors

The C. A. Blume Construction Company has erected many steel structures in and about San Francisco, and has lately enlarged its field of operation to include the states of Oregon and Washington. At the present time the Blume company is erecting seven buildings for the Inland Portland Cement Company, Washington, in addition to the steel frame of the new court house, Bakersfield; car shops for the Western Pacific Railroad, Sacramento; agricultural building, Berkeley; Lachman estate building, Market and Fremont streets, San Francisco, and power house and laundry at the San Francisco county hospitals. The steel frame of the fifteen-story Hewes building, designed by Architects Reid Bros., was put up by Mr. Blume in record time.

Kahn System Products

The Trussed Concrete Steel Company of Detroit is alive to the demands of the present day for fire-proof building material. In connection with its much-used system of steel reinforcement for concrete structures, the company handles the following products described in one of its recently published pamphlets:

"Hy-Rib is one of the products of the Kahn System of Reinforced Concrete—the standard low cost fireproof construction—backed by successful use in over 3,000 important structures in all parts of the world.

"Rib-Lath is the stiffest steel lath on the market. Manufactured in three different styles and in twelve different weights. Ideal for plaster work of all kinds.

"Rib Studs are made of the highest grade of steel and are open for the passage of conduits and pipes. Ideal for hollow walls and partitions.

"Rib Metal is a series of bars rigidly connected and handled in one piece. An ideal reinforcement for concrete slabs, walls, and conduits.

"Kahn Trussed Bars with rigidly connected diagonal shear members have long been recognized as the perfect reinforcement for concrete beams and girders.

"United Steel Sash is made of deep rolled steel sections giving maximum rigidity and lighting—the best fireproof window for factories, warehouses, and industrial buildings.

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When writing to Advertisers mention this Magazine.

An Improved Door Check and Spring

There are probably very few, if any, architects and builders in San Francisco and vicinity who have not heard of Rischmuller's improved patent door opener and closer. It has long since been demonstrated to be the only successful working opener for apartment houses on the market, for the front door can be opened from every apartment while the concealed check and spring closes the same with the least possible effort. This is an impossibility with an electric opener for it is out of the question to attempt to make two springs work alternately one against the other. But it is not the purpose of this article to elaborate upon the merits of the Rischmuller door opener. As already stated, the opener is too well known for that.

It is the Rischmuller improved liquid door check and spring that is just now attracting the attention of builders and creating inquiries from architects. It is the simplest and most durable device yet produced and according to its inventor, is the only absolutely concealed check on the market. It is constructed so that the spring has the most closing power when the door is ajar and gradually decreases to zero when the door is opened to more than 90 degrees. It is therefore more convenient and attractive than any other like device manufactured, and not only useful in connection with the door opener but for all purposes where a check and spring is desired. It is no exaggeration to say that no modern flat or apartment house is complete without the Rischmuller devices. Both are products of home industry, too. Further details will be furnished gladly upon application.

Builders Exchange, San Francisco, or 842 37th street, Oakland.

Building Prospects Good

The F. O. Engstrom Company, building contractors of Los Angeles, report an encouraging outlook for the coming year.

"Money for building purposes is now more easily obtained," stated Vice-President F. E. Engstrom. "There are many contracts now up for bidding, and the coming winter and spring look promising to us. Our business has held up very well the past year. We are now doing a business running between one and a half and two million dollars yearly.

"We have some heavy contracts in view. At present we are building the Union League Club, at a cost of $300,000, the State Agricultural building at Agricultural Park, costing $250,000, and many smaller constructions, all in Los Angeles and vicinity.

"Reinforced concrete buildings are far more numerous than formerly. The concrete industry here and throughout the country is on a marked increase. The gravity system of concrete distribution, which, by the way, originated locally, has cut labor expense in half. The concrete is raised to high towers and sent down through pipes to desired locations; a big saver.

"The Sweetwater dam work will be constructed by the gravity system. We employ in our various departments from 800 to 1500 men."

Dean Reversible Window

In these times of home industry agitation too much publicity can not be given California enterprises that have achieved unusual success. One of these products is the Dean reversible window, which is to be found in many of San Francisco's most pretentious buildings.

The Dean window is in two forms. One consists of the Dean reversible sash alone, this sash tilting in its frame. In the other form of window, the Dean reversible sash is applied to the regular cords and pulleys, so that, while having the advantage of the Dean window, it also has the same motions as the ordinary window. There are many things to be said in favor of the Dean reversible window. In the first place, it eliminates the danger of window washing, as both sides of the pane can be washed from the floor inside the building, the Dean sash permitting either side of the window to be turned inward for this purpose. Perfect ventilation is assured with the window, which can be tilted to any angle, and this

(Concluded on page 129.)

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permits the air to circulate without creating draughts. There is nothing finer for residences, flats or hotels, especially where the best of everything is wanted, than this latter form of Dean reversible window, and nothing better than the other form for office buildings, especially when the windows are made of a single pane of plate glass.

The Dean Reversible Window Company, Inc., of 551-553-555 Brannan street, between Fourth and Fifth streets, owns the Dean patents and manufactures the Dean windows. Mr. H. Levinson is president and manager of the company, Mr. Paul Barnum is vice-president and superintendent, and Mr. D. H. Corkly is secretary. These gentlemen have brought the window and its methods of manufacture down to perfection, and have brought it to the attention of the whole State. The window is an article that sells on its own merits, and it is proof of how well it is pleasing to state that nearly twenty thousand Dean windows have been installed since the fire of 1906, and the big, airy and finely equipped factory is kept busy the year 'round manufacturing windows, which are shipped to all parts of the Pacific Coast

Egg Shell Finish

CLIFF HOUSE
Finished with Worden Meeker Varnish Co. Products

ONE of the predominating beauties of the new and world-famed Cliff House is the attractive interior. Particularly noticeable is the handsome grained wood, many admirable specimens greeting the eye of the lover of such. To bring out the full splendor of the beautiful grains of the panels the wood was finished with the Worden-Meeker Varnish Company's Egg Shell, which produces a dull or flat surface. This flat finish is very popular at this time and is coming more into general use because the Egg Shell Finish of the Worden-Meeker Varnish Company, being flat varnish not requiring rubbing, effects a large saving in cost of interior work. Many of the prominent architects are now specifying this splendid home product, which has not been equaled thus far in the world of varnish. The architect who is alive to opportunity will, upon investigation, find that the Egg Shell finish fully meets his demand for a perfect flat surface and will prove an economy for his client.

The Worden-Meeker Varnish Company also furnished the other materials entering into the painting and varnishing of the new Cliff House

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DECEMBER

1910

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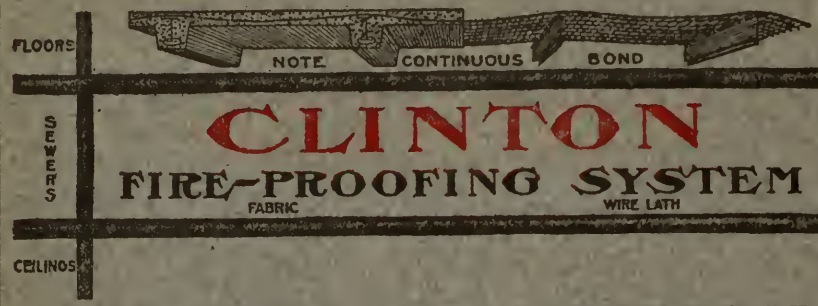

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MR. IRVING K. POND

President of the American Institute of Architects, Who Will Preside at the Forty-fourth Annual Convention of the Institute to be Held in San Francisco in January, 1911

Frontispiece
The Architect and Engineer
of California
December, 1910

THE

Architect and Engineer

Of California

Pacific Coast States

VOL. XXIII. DECEMBER, 1910. No. 2.

American Institute of Architects to Meet in San Francisco in January

By SYLVAIN SCHNAITTACHER, Secretary of San Francisco Chapter.

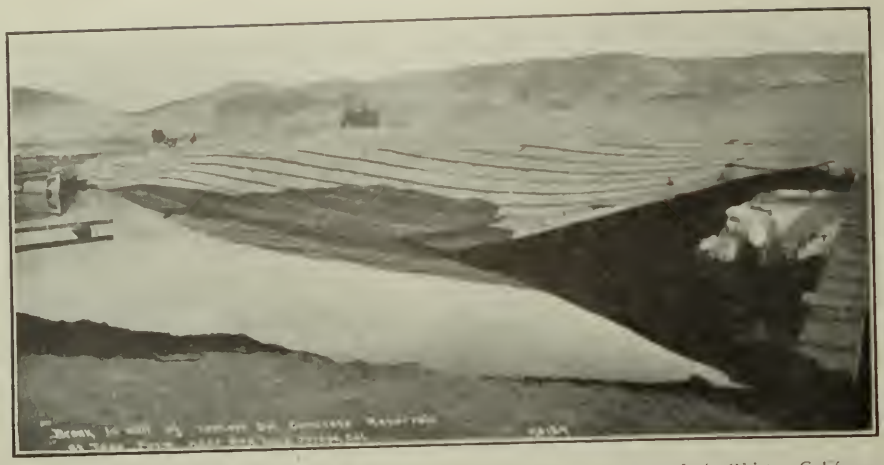
THE forty-fourth annual convention of the American Institute of Architects will be held in San Francisco January 17th, 18th and 19th, and the San Francisco Chapter, through its reception and entertainment committee, has endeavored to provide a program which will prove both interesting and enjoyable to the officers, delegates and accompanying party. Invitations have been extended by the Chapter to all the Chapters throughout the United States to send as many representatives as possible, even though they be not delegates to the convention. More particular invitations to take part have been sent to the Southern California and Washington State Chapters.

A special train bearing the convention party is expected to arrive in San Francisco on Monday evening, January 16th. The Fairmont hotel has been selected as the official headquarters and the convention meetings and banquet will be held there. The Institute banquet, which is the closing feature of the convention, and, as far as the entertainment goes, the principal event, will be tendered to the Institute by the San Francisco Chapter, and will take place on Thursday evening, January 19th. A special feature of the banquet will be the decorations, which have been entrusted to a well-qualified sub-committee. It is intended to make the banquet one of the most noteworthy affairs of its kind ever held, not only in San Francisco, but in California. The distinguished members of the learned professions, the heads of the two universities, important government, army and naval officials, together with the State's most prominent private citizens, will be invited guests at the banquet, to assist in receiving our visiting brethren.

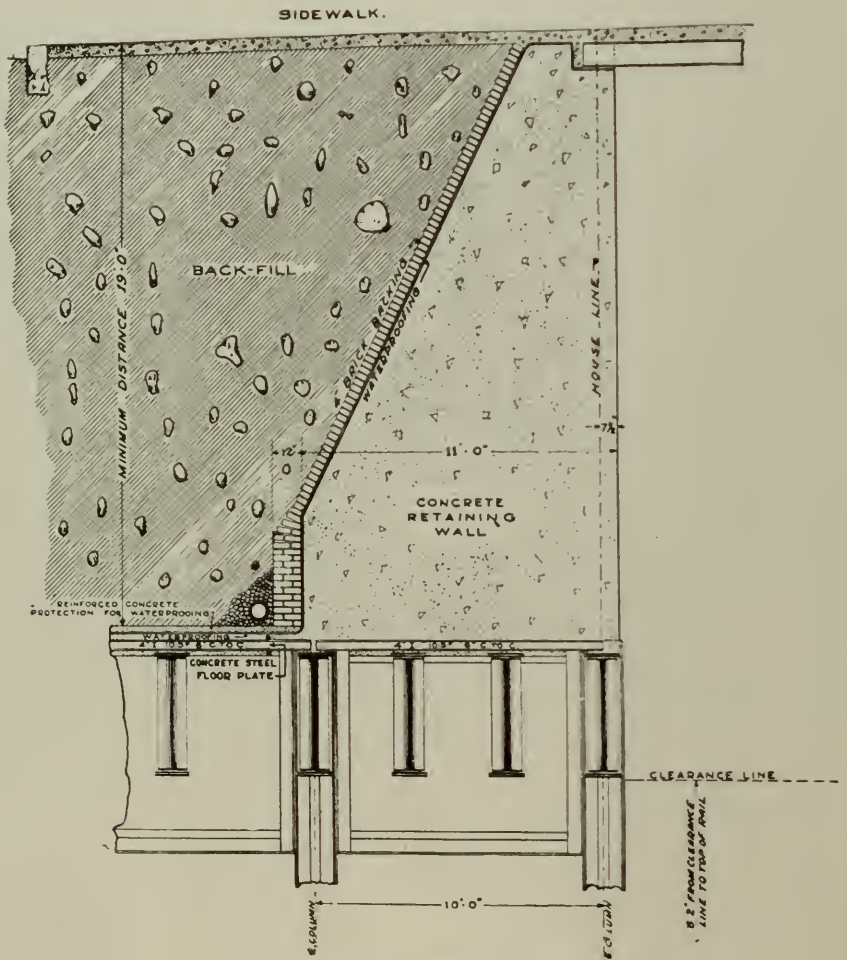
No program of speeches has as yet been made, but it will be in keeping with the dignity and importance of the affair.

A sub-committee on sight-seeing has been appointed, which will arrange a program for Friday and Saturday, January 18th and 19th. Weather permitting, trips will be made to Mt. Tamalpais, University of California and Stanford University; and one day will be devoted to an automobile tour of the city. A committee on incidental entertainment will arrange for all the spare time of the convention intermissions and the evenings. As it is anticipated that there will be quite a few ladies in the party, some affairs will be arranged for their particular entertainment.

With other events, a selected exhibition at the San Francisco Architectural Club is also planned.



Showing Break in the Wall of Million Barrel Concrete Reservoir near San Luis Obispo, California



Sectional Diagram Showing Mode of Construction

Showing Method of Reinforcement for Walls of Concrete Oil Tank near San Luis Obispo, California

The Failure of a 1,000,000 Barrel Concrete Oil Tank

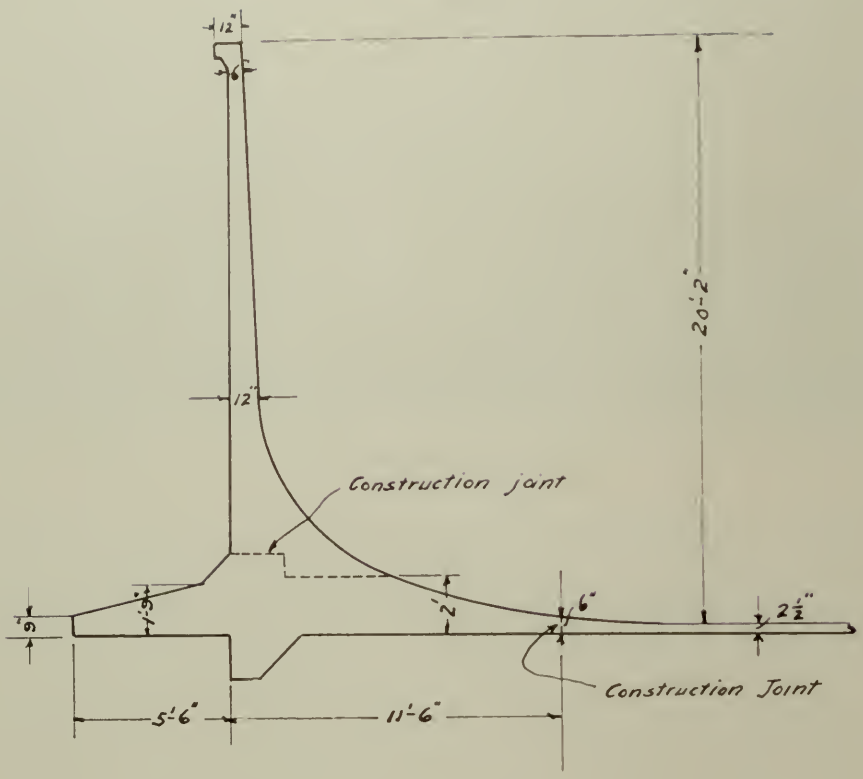
By F. W. JONES.

Engineers and contractors throughout the country are manifesting keen interest in the failure of a gigantic reinforced concrete oil tank, near San Luis Obispo, Cal., on November 22d last. The big reservoir had just been completed, when, with a roar and crash, a large section of the concrete wall toppled outward, releasing thousands of gallons of oil. From the investigation conducted by members of the engineering profession it would appear that either the design or construction—or both—were faulty. It is impossible to place the actual blame upon any one until the tank has been entirely emptied and a minute examination made.

THE Union Oil Company has lately built two large reinforced concrete oil reservoirs and a score or more of steel tanks on its property at Tank Farm, a few miles out of San Luis Obispo, California. The concrete tanks were of considerable importance in the construction world, owing to their immense proportions, it being claimed that they are the largest of their type in the world. Both are circular in plan, with a diameter of 600 feet 6 inches, and a height of about 20 feet, the capacity of each being 1,000,000 barrels. The outside walls are six inches thick at the top, exclusive of the coping, and 12 inches thick at the bottom. The base plate projects 5 feet 6 inches beyond the outside face of the wall, and varies in thickness from 9 inches on the outside to 1 foot 9 inches at the wall line. The bottom of the tank within the walls is 2½ inches thick. The reinforcement was of round bars, ½ inch and ⅝ inch in diameter, the major portion of which were vertical. All of the horizontal bars were ½-inch rounds. The roof was of timber, supported by the outside walls and by interior columns of timber resting on concrete footings.

The supporting soil is adobe with an admixture of clay. Around each tank, which was placed practically on the general level of the valley, a high earth levee was built several feet distant from the concrete walls, and it is to this precaution that the oil company owes the saving of thousands of barrels of oil.

An 8-inch pipe line from the Lakeview gusher in the California Oil Fields was used to bring a supply to the first of the two tanks shortly after it was completed. The oil flowed into the tank at the rate of 900 barrels per hour. When the tank became partly filled vertical cracks appeared in the outside walls, extending from the coping to the bottom, and oil began to exude on the outside.



Another View Showing Steel Reinforcement of Reservoir Walls

Sketch for Combination Town Hall and Fire House, San Anselmo, California
W. Garden Mitchell, Architect

Town Halls of Small Towns

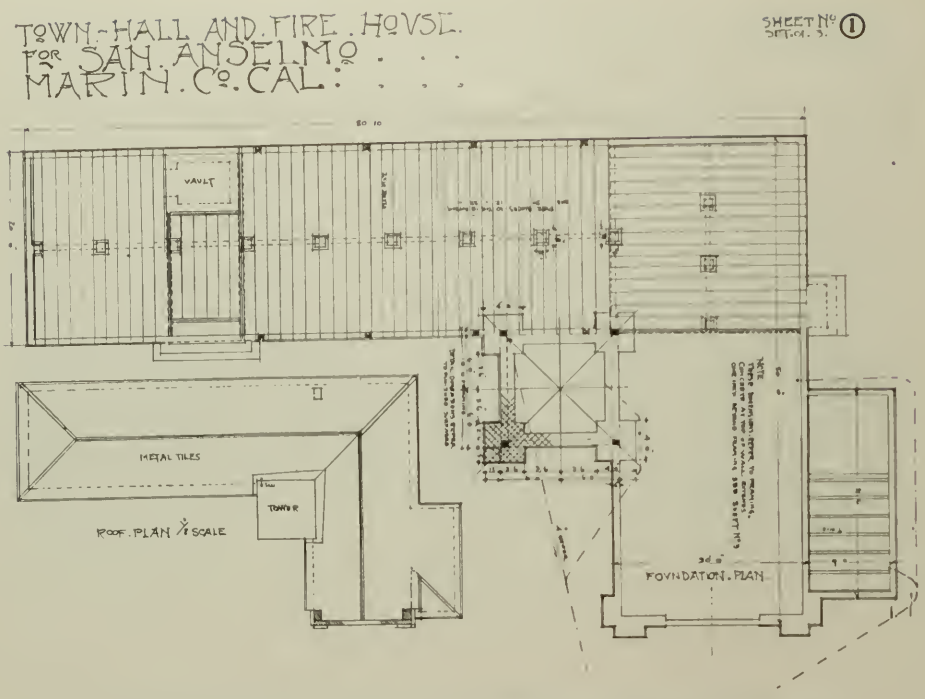
By W. GARDEN MITCHELL, Architect.

EVERY incorporated town, however small, should have its town hall. Such a building is not an extravagance. There exist two essentially commercial and economical reasons for its being. First, because every town has to make public disbursements for its upkeep, and from time to time expend considerable sums of money in improvements; and whether these expenditures be counted by thousands or millions they are always large and important to the community that provides the money—large in proportion to its resources.

In every avocation in life the dignity of office is strengthened by comely surroundings, and more particularly in matters that relate to public affairs, should that dignity be sustained by environment calculated to stimulate respect for those to whom authority has been given.

Who among us will not admit that a judge surrounded by the monumental architecture of a stately court is not prompted by the fineness of its lines to hold more evenly the balance of justice, and in judgment to give without fear or favor his decree.

The elegant, massive and correct proportions of such a court mirror to him (assuming that he still retains normal susceptibility) fineness of judgment, immovability of decision and penetrating analysis of evidence submitted. The very walls of such a building call to him for rectitude, even that very rectitude which they in their inaudible language express. The cobweb-hung rafters of a barn could in no such manner stimulate him to greatness, but rather by their meanness inoculate him with that slovenliness which is their own, rendering his decrees crude and unworkmanlike, and his bench but the shamble of equities.



Foundation and Roof Plan, Town Hall and Fire House, San Anselmo, California

In order that we may have our public affairs administered with capacity and integrity, we aver to choose from our midst those whom we can respect, demanding in return respect of our interest, and endeavoring to enhance that respect by surrounding our public officials with becoming dignity, inspiring them thereby to maintain and advance that honor which is their due, rendering unto Caesar those things which are Caesar's. In such manner respecting these public offices, we may all the more reasonably hope to draw from our midst honorable and capable administrators whose wise and honest expenditure of public moneys will be of direct economical value to the community, and indirectly by setting before the outside world a fair name for our city, quicken both our moral and material advancement.

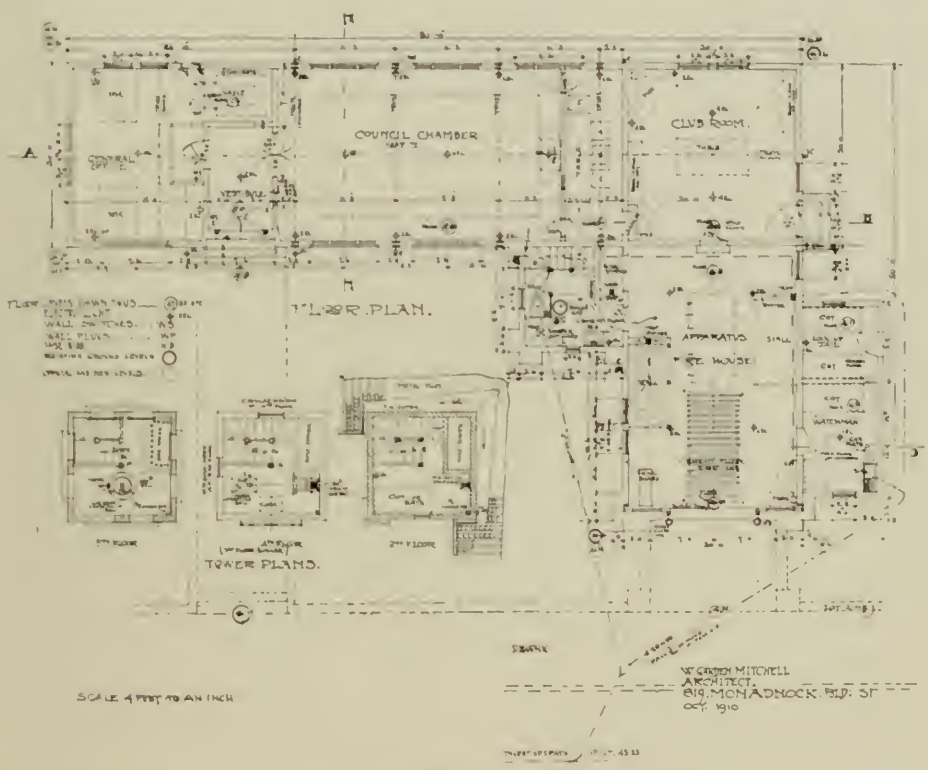
So much then as to surrounding our municipal offices with dignified environment. Next, as to beauty for beauty's sake, plus the economical advantages accruing to a town therefrom, Ruskin has well pointed out that it is not because we are too poor that we no longer build those fine monuments of architecture that were the pride of mediaeval times, but rather that we are too selfish, concentrating our expenditures on our own habitations rather than on those of the commonwealth. Yet, as Ruskin has pointed out, it is of more real worth to a community to possess a few really good public buildings that all may enjoy, even at the expense of the humbler dwellings that may surround them, than that all should be mediocre, no gilded pinnacle rising above the level roofs of the commonplace. The tendency of our times is to be too pronounced in regard to those things that relate to our own individuality, and lukewarm in reference to things relating to the common weal.

Let us endeavor to cultivate the quality of civic pride.

Many a city of the Old World owes its fame, among the kingdoms of men, to possessing even one building of merit. Such a building is a source of pride and profit to the community, attracting the stranger to sojourn within its gates, and affording an ever-enduring source of pleasure to all who behold it. I am speaking so far, entirely in the abstract, discussing basic principles and fundamental motives that prompt and justify the expenditure of public money on public adornments.

Dismissing the abstract and descending to the more practical, let me say that I fully realize the impossibility of small cities, not to speak of still smaller towns or mere villages, hoping to erect monuments of architecture—Meccas to which lovers of the beautiful may repair; shrines on which to place their tokens of admiration—but we may strive to make our towns attractive even if in a very small way. Commencing by creating a civic center, a central plaza, planned on some comprehensive scheme and looking to the future to embellish and enlarge that which in our day may be but a nucleus. Thus we have, as set forth, two strong arguments in favor of a town hall of sightly appearance; first, as a fitting place for business, and second, as a thing for beauty's sake, and that profit which accrues to a town by making itself attractive and drawing within its gates the passing stranger, as well as the permanent resident.

Leaving aside generalization and coming to a case in point, the town of San Anselmo, which, by the way, occupies a site unsurpassed in beauty, has been fortunate in having donated to it by a public spirited citizen, a considerable tract of land in the center of town, sufficiently large to accommodate the town hall and fire house, and allow considerable space for surround-



Floor Plan, Town Hall and Fire House, San Anselmo, California

ing gardens. Although surrounded by streets, the space is not large enough to be entitled to the name of plaza, which, indeed, every town should possess; but nevertheless it is a long way superior to the first proposed fifty-foot lot.

On this acre of ground the town proposes to erect its town hall and fire house. The building, as planned, provides just the minimum requirements, but sufficient for all present needs, namely: A council chamber, general business office with small vault, a fire house with hose and bell tower, lavatory accommodation for the volunteer firemen, a clubroom and watchman's quarters, and in addition, a small jail. The building is spread out so as to make it appear as important as possible for the money expended, and also in consideration of the large open space in which it is placed. The material proposed for the external walls is plaster on metal lath, with Mission tile roof.

The estimated cost is between $6,000 and $7,000, exclusive of heating, which for the present will be omitted.

* * *

Architectural Terra Cotta Becoming a Popular Building Material

BY virtue of its merit architectural terra cotta has in late years commanded a place in a class with the best and most popular structural materials. This covers a field that includes both plain and decorative work, and one that in a measure is unique, from the fact that there is no limit to the possibilities in this field of labor. It has attained at this time a most stupendous increase for all kinds of building construction, from the small house to the skyscraper, and is manufactured so as to imitate with remarkable exactness the most costly and attractive materials for building purposes.

If we look over the history of terra cotta as a structural material, at least for exterior use, we will find that it does not extend over a period of more than about forty years. In that short time, however, it has attained a place that is worthy of the highest praise, and this has been due to its peculiar attributes, which might be summed up in a few words. First, the cost, as compared with many other structural materials, is reasonable; in fact, it is decidedly less costly than many kinds of building material, and in some respects surpasses them. It is durable, as time tests will amply prove, and it is fireproof. The latter is proven from the simple fact that it is manufactured of a clay that is baked to vitrification, thus insuring this feature beyond all possible doubt.

It can be made to resemble any kind of exterior material covered by stone, marble, granite, and other like substances that are classed among the best in use today. This has only been made possible in the past few years with the improved methods of manufacture. Now the whole operation is one that deserves the consideration and commendation of all classes of contracting operators. It has all the essentials that are necessary to make it popular, and this has doubtless been the real cause for this status of the matter.

There is little in the structural world today that is more attractive from an artistic point of view than the higher grades of architectural terra cotta. The colors are so delicate and the patterns are so intricate as to demand the admiration of every lover of the highest in structural work. Its lightness is only another feature that has added to its more general adoption

for tall structures, and in this way it meets a demand that is sometimes not easy to fill.

The entire manufacturing process is now one of interest, and is conducted along the latest lines of intelligent operation. From the time the drawings are made, on through the various processes of preparing the clay, molding, making the patterns and spraying the colors or the enamel on with compressed air, to the baking of the terra cotta, it is one of more than usual interest. It proves that there is reason for the demand, and to make further doubt impossible as to its place in the structural world.

The age is rapidly demanding fireproof structures. There is a cry far and wide for buildings that will reduce in great part the enormous losses that are now sustained in this country. There is a sane reason for this, and the field covered by terra cotta is one that meets these demands most fully. It is impossible to destroy by fire that which has been made, or at least perfected, by this very element itself. Vitrified clay can not be destroyed by fire, and this is in reality what terra cotta is, with the added charm that it has attractiveness to make it pleasing for structural purposes.

What is most needed today are such structural materials as will not only increase the security of our structures from a fire resisting point of view, but that will likewise be a factor to make the decorative portions of our buildings more nearly attainable. Then there is the matter of cost, which must be considered very carefully these days. It enters largely into our considerations in large undertakings in the building field, and this is where there has been a decided advantage in terra cotta.

If we come to take a composed view of the question there is reason for the increasing demand for architectural terra cotta. It has not replaced the structural material, but it has simply made a place for itself along with others and has filled a want that has for years been an insistent one. It fills the niche that was for many years vacant. We must have more attractiveness in more of our structures. We must begin to get away from the commonplace, and look for ideals that have been so long lacking in many of our structures. This is where there has been found in terra cotta an ideal that is sure to increase its wider use in years to come.

Then there is the important question of sanitation in structural work. This may not now be considered as important as it will in the future, and there will come a time when there will be demanded a larger percentage of buildings erected that will in a great measure have a more permanent form of sanitation, and that will have at least a tendency to reduce the number and fatality of our maladies. These things are not as yet being considered to their fullest, but it is time for their consideration, and there is reason why there must be more attention paid to the matter of structural work, and to the kind of materials that make sanitation possible. In this respect there is a favorable reason for burned clay, and in the form of architectural terra cotta it attains one of the higher ideals, so that it must be compared with the best that is today being offered for the consideration of both contractor and house erecter.—Exchange.

* * *

Things move along so rapidly nowadays that people who say "It can't be done" are interrupted by somebody doing it.

* * *

The world can get along just as well without the aid of any particular individual in it, but every man ought to be so in love with his own particular task that he feels he can do it just a little better than anybody else.

Design for City Hall, San Francisco
Glenn Allen, Architect

Highest Building in the World—A San Francisco Possibility

By GLENN ALLEN, Architect.

A MEMORIAL CITY HALL — fifty-five stories high—the largest building in the world, costing $6,500,000 and intended to commemorate the rebuilding of San Francisco and the completion of the Panama Canal—why not?

San Francisco has always been noted for her municipal progress, and the old City Hall, which was originally designed in 1870, was one of the finest buildings in the world at that time, ranking next in size to the Philadelphia City Hall, which was then the fourth largest in the world. The dome tower on the old municipal building ranked third in height among the great domes of the world, being thirty-two feet higher than that of the Capitol at Washington.

Since the time the old City Hall was erected, progress in building has shown a tendency toward higher and more compact structures, in which departments can easily get into communication with each other by fast-moving elevators, instead of being compelled to walk from one-eighth to one-quarter of a mile, as was necessary in the former city building.

This progress in building is shown conclusively in all large cities, but notably in New York, by the erection of the Singer tower, while the Metropolitan Life tower, which is the highest habitable structure in the world, rises to a height of fifty stories, or about 700 feet, with offices and elevators running to the forty-fourth story. As in all high buildings, the elevators are run on the express plan, certain elevators not stopping below specified floors. Thus the consumption of time of a passenger to the tower offices does not place these offices at a disadvantage over those in lower buildings, where slow speeds and frequent stops may require the same expenditure of time.

The City Hall proposed by the writer consists of a base structure 285 feet square, with a central tower in the form of a Greek cross 140 feet in extreme dimensions each way.

The four wings of the cross rise to a height of forty stories, and the central portion extends up to a height of fifty-five stories, or a total height above the sidewalk of 815 feet.

The building is symmetrical in plan and is designed to front on City Hall avenue at the intersection of Marshall square. This would place the central tower at the intersection of the axis of Eighth and Fulton streets, and nearly midway between Hyde and Larkin streets, so that the building would appear to the best possible advantage when approached from any direction.

The comparatively small area covered by the building (less than two acres) would leave a large amount of the site to be laid out as a park, whereas the old City Hall, which covered four acres, occupied the greater portion of the block.

The building has three entrances, one from City Hall avenue, one from Larkin street and one from McAllister street. These entrances all lead to a central rotunda containing the grand stairway and elevators.

The building is extremely monumental in design, consisting of four massive domed pavilions placed at the corners of the base and rising four stories in height. These are connected by massive arches surmounted by a row of gigantic columns fifty feet in height. This base portion and the first four stories of the great tower should be of some California stone,

preferably granite, above which would rise the plain shaft of the tower to a height of 480 feet, which should be of semi-glazed terra cotta. This would be surmounted by the ornamental top portion of the tower which should also be of glazed terra cotta enriched with colonades and ornamented as shown.

The floors of the base portion of the building are devoted to the Police and Fire departments, Registrar, Hospital and executive offices, while the tower portion could be devoted to the Superior Courts, Judges' chambers, jury rooms, Justices' Courts and chambers, law library, overnight jury-rooms, Board of Education, Superintendent of Schools, Civil Service Commission, Board of Works, City Engineer, City Architect and similar offices and departments.

At the fortieth floor there could be an open roof garden over the four wings forming the cross of the tower, which would afford an observatory from which all parts of the city and surrounding country could be seen.

The tower portion above this could be utilized for a signal service station; the great clock with four dials, each thirty feet in diameter; bell chimes and great clock bell for striking the hours, which could be heard in all portions of the city; wireless telegraph station and also a searchlight which would cover all parts of the city and bay and Golden Gate, also the ocean boulevards, and could be seen far out at sea.

This tower would easily overtop all the hills of the city and county, with the single exception of Twin Peaks, and would furnish a landmark which would be visible to visitors approaching San Francisco by land or sea for many miles.

At first glance the question would naturally arise as to whether or not the city could utilize a building of this size. In this relation it is interesting to compare this building with the old City Hall, destroyed in 1906. The old City Hall covered approximately four acres of land; this building covers a trifle less than two acres. The old structure contained approximately ten acres of floor space; this building contains thirteen acres. The old building contained a little over 10,000,000 cubic feet; this building contains nearly 13,000,000 cubic feet, so that it would appear with its normal growth San Francisco within the next few years will easily require the space provided in this building. The old City Hall was planned to meet the requirements of the city for many years, and it would seem to be folly to erect a building now which would only meet the present requirements of the city.

The building would be a steel frame structure with reinforced concrete floors and walls and metal doors and windows glazed with wire plate glass.

It is a fact not generally known abroad that our tall buildings, the honestly built steel frame structures, were undamaged by the earthquake; the injury they received being entirely due to fire, and if these buildings had been equipped with metal doors and windows glazed with wire glass, the damage would have been very slight, as was the case in the Kohl building, which was the only building which was equipped with metal doors and in which many of the offices were undamaged by the fire.

This proposed City Hall from an engineering standpoint presents no problem which can not be solved or met in a practical way. Owing to the size of the base of the building the extreme pressure exerted on the foundation from combined dead and live loads and wind pressure would be considerably less than is the case in the Metropolitan Life tower in New York, which is only seventy-five by eighty feet in size at the base and

over 700 feet high, from the foundation to the top. The combined dead and live loads in this building would exert only a pressure of about three tons per square foot on the foundation provided a monolithic foundation with grillage beams is used under the entire tower portion of the building. The safe bearing power of ordinary soil such as sand and gravel or dry clay is from four to six tons per square foot. Thus it will be seen that the foundation is a problem which could be easily solved, but the type of foundation would be determined after test borings have been made at the site. Rock has been found on certain portions of the site at about eighteen feet depth, and it is reasonable to suppose that a rock foundation can be secured for the entire building at an available depth.

The cost of a building of this character would be no more than a building of the ordinary type. The repetition of story after story of severe simplicity in the main shaft of the building would be a matter of great economy, and the building would depend more for its architectural effect upon its dignity and graceful proportions than upon a multiplicity of ornaments.

First-class buildings of a similar character, that is, class A steel frame buildings, can be constructed now for approximately 35 cents per cubic foot. Allowing for the extra labor due to the extreme height and the marble work and interior decoration and finish not required in an ordinary building, this building could easily be constructed for 50 cents per cubic foot. The building contains in round numbers 13,000,000 cubic feet, making the cost of the building $6,500,000. The old City Hall cost in round figures $6,000,000, or about 60 cents per cubic foot.

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Value of Good Workmanship in Cement Floors

GOOD workmanship is seldom more essential to good results than in the laying of granolithic floor finish. An engineer and mill architect, reporting his own experience and observance, said:

"There is a tremendous difference in the wearing qualities of cement finish, and I believe it is largely a matter of workmanship. To wear well, in my opinion, the top finish must be much more thoroughly trowelled than is customary among cement finishers. I also seem to find that a finish made only with cement and sand, like the ordinary sidewalk, does not stand the trucking nearly so well as where we get in as much stone as possible. We have found also that it is an absolute necessity to use in the finish as hard a grade of stone as we can get to have a floor that will stand.

"The average cement finisher dislikes to work with stone in the top finish. I would not object so much to the wearing down of the top finish if I knew of some practical way for repairing it. When the top finish is removed and we attempt to put a new one down, it is always more or less of a gamble as to whether the repaired finish will stand up under the trucks."

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* *

Be the kind of man who awakens in the morning with joy over the advent of another day for achievement, who retires at night leaving something of accomplishment behind to show for the day's work.

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* *

The man who halted on third base to congratulate himself failed to make a home run.

Plan proposed by Mr. Ernest Coxhead showing the architectural possibilities and Pacific International Exposition, and the proposed simultaneous and permanent develop suggested by Senator Francis G. Newlands in an address given before the San Francisco

A Waterfront Exposition Would Mean Permanent Architecture

ANENT the ingenious plan of Senator Francis G. Newlands to hold the Panama-Pacific exposition on the San Francisco waterfront, and which was outlined in the September issue of the Architect and Engineer, Mr. George E. Burlingame, a San Francisco contractor and builder, has written some interesting comments for the California Weekly. Parts of Mr. Burlingame's discussion, at least, are along lines fully indorsed by San Francisco Chapter, American Institute of Architects, before which organization Senator Newlands' original remarks were addressed.

To quote from Mr. Burlingame:

In the conception of an exposition, of all the elements that enter in for consideration the first is the visitor.

From the standpoint of the visitor, an exposition is, in its broader meaning, first of all an educational undertaking. It is an effort at uplift,

... of utilizing the waterfront and Telegraph and Rincon Hills for the Panama-... beautification of the harbor accommodations of Greater San Francisco, as ... Architects, September 15, 1910.

toward a clearer visioned and a broader humanity. Its success depends upon the instructive good one can take away with him. It is one thing to have an exposition interesting, it is another to have it interestingly instructive. It is one thing to be handsomely entertained, it is quite another to find entertainment that holds a deeper meaning than the passing show. You may take a piece of Chinese carving and observe it for an hour, following its lines over and under, wondering at the intricacy of its design and the skill and labor of its execution. But though you take away with you a vivid remembrance of the carving in all its details you have only a remembrance. Now go out and walk for an hour along the beach when the moon is full and the surf is pounding and white flecks of foam jump up and scurry across your path. Then go home and go to bed. Though you have seen only the silvery surf and heard its monotonous hammering and felt only the wind of heaven blowing on your face the blood is leaping through your veins and you are a new man with a new grip, a bigger vision, a stronger purpose and an increased capacity to face the future.

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Now this is incidental but it has a point, a point that is practical and applicable to the case in hand. We have something worth while to exhibit and something worth while to see and go home and think about. Is it worth while to show advantageously what we have or must we manufacture something out of the genius of our minds and display it out in the back yard?

That distinctive feature of which we alone, of all the world, can boast is San Francisco bay. This is the excuse for San Francisco, it is the explanation of the community. Its proportions are magnificent, its islands and inlets, its shores bordered with hills that catch the light and gather the shadows and suggest the valleys and forests beyond—this bay, as a thing of impressive beauty is our first and greatest show place.

But the bay is more than a thing of great natural beauty, it is a harbor. It signifies trade. It represents commercial capacity. With its one hundred miles of waterfront, its possible four hundred and seventy miles of berth room—sufficient to handle twenty times the present commerce of London and to accommodate a population of fifty millions of people—this bay stands for investment opportunity and net returns on dollars.

Adjunct to the bay and of equal interest to the visitor are its ships and shipping. To one there is a poem in every mast, a romance in every weather-beaten hulk. To another every craft, from scow to steamer, signifies a link in the chain that binds the world together in commercial fraternity.

The bay, its shores and its shipping, its craft and its commerce, are the best we have to show at any time. But at this time, if there is any significance in this exposition, if it is to be the dedication of the greatest oceanic commercial undertaking in the greatest of all commercial ages, then double interest and significance lends itself to the bay and its activities.

We can do no better than stop right here and think over the meaning of this exposition and whether its meaning should be emphasized. Of all the great multitudes of people who have attended any exposition of recent years the percentage of those who take away with them a clear idea of its specific meaning (if, indeed, it has had any) is negligible. Now this is not as it should be. An exposition should have a clear and unmistakable significance. Our failing is that we assume that this is the last chance for the world to see and that, therefore, all things must be crowded upon its vision. This is an error not only from the standpoint of the good the visitor gets out of the fair but also from the standpoint of his enjoyment of it.

There should be a single dominating feature to this exposition, the feeling of its character should cling to a man everywhere he goes. And whether he is here for an hour or for a month he should go away with the indelible impress of its meaning upon his mind. In holding the exposition upon her waterfront San Francisco achieves in one master stroke this character and meaning which she must otherwise secure imperfectly, if at all, only with effort and sacrifice.

Mr. Newlands points out that for the execution of a waterfront exposition far more funds would be available than for any other plan. The Harbor Commission's issue of $9,000,000 of bonds (which is to be submitted for approval at the coming election) is one item. And it may be assumed without unreasonable exaggeration that this plan would secure twice the support of any other plan, especially if we count the substantial improvements that this plan will inspire in the immediate neighborhood. It is quite probable, as Mr. Newlands asserts, that the Southern Pacific would

be led to put up a magnificent terminal station opposite the ferry. This, with the other expenditures that would be induced along the west side of East street, would add a very material sum to the aggregate that would go to make up the exposition.

There is no question that, from the standpoint of the results that large expenditure makes possible, this plan is clearly superior, and if we leave out the millions represented by shipping and craft that will enter quite as essentially into the plan as buildings and improvements.

And it cannot be gainsaid that the ships and shipping will take the place, in interest, of exhibits that otherwise must be provided at great outlay. In fact, it is hard to think of how much money it would take to substitute for these a feature of equal interest. The opportunity to observe the goings and comings, the takings and bringings, the cranes, hoists, trucks, the bags, boxes, crates, up to the shoutings that make up the daily activities of a great commercial metropolis; the opportunity to view the entire teeming, hurrying, busy, vital, world-moving machinery that grinds out each day its generous quota of economic history, not a mere photograph or model, nor a moving picture imitation nor even a high class vaudeville reproduction, but the fire-and-melting-pot, hammer-and-tongs reality whose products are actually on their way to the final completed structure that goes to make up your own world and your own most intimate interests in it—this opportunity is not to be compared with what human genius and limited expenditure might be able to substitute, certainly it is not to be compared to the stereotyped, exaggerated, unnatural exhibits typical of expositions.

But the question does not stop there. Whatever we may think or whatever we may do we have the waterfront to consider, and we must consider it whether we like it or not. Like a scar on the face, we cannot hide it if we are to be seen at all. It is the first thing that greets the visitor on his arrival by way of the canal, it is the last to which he bids good-bye on his return overland. Are we willing that those two psychological moments that enter so largely into the estimate of us in the eyes of the world—the first and the last impressions—shall come from the present waterfront?

Now of second importance and interest to the world must stand the reconstructed city. The spectacular achievement of this phoenix of the Golden Gate is the first thing the name "San Francisco" suggests to the world. To fail to give proper prominence to the risen city is to take the world to the back of the grand stand and invite it to peek through a knot hole at the side show.

A waterfront exposition is a down-town exposition. It is through the business thoroughfares that the traffic will be led, it is by the established business houses that the crowds will be cared for. This will not only please our visitors, it will protect them from the irresponsible riff-raff of hangers-on, the parasites and bunco element that commonly infest the out-districts of expositions.

These things, the bay and the new city are the unique, the exclusive attractions that San Francisco can offer. Other things are incidental. Let these be placed at their best, arrayed and embellished and emphasized and no exhibition heretofore undertaken will compare in real magnificence and emphatic universal interest with such an exposition.

It is not, however, wholly a question of what he will see that interests the visitor. The question of how he will be taken care of is also of serious interest. Convenience and comfort and reasonable charges enter quite as

fully into his enjoyment as the merit of the display. There is, perhaps, hardly a person who has visited the great fairs of the past who does not hold a more vivid recollection of the over-taxed street-cars, the pushing, crowding and stifling of their coming and going, of poor hotel service and high expenses, than of any other feature of the exposition. We can almost entirely avoid this. We can permit our visitors to take away with them only pleasant memories. From the waterfront the entire resources of the bay community are placed at the disposal of our guests. It is impossible to conceive of a more perfect arrangement for handling the crowds comfortably and without friction than this.

No element could lend greater certainty of the financial success of the undertaking than the assurance to the world that the transportation difficulties so common to expositions had been eliminated and that ample accommodations were available to provide the best service and to keep the cost down to normal.

The good that will accrue to the city and the entire bay community from a central, down-town, waterfront exposition whose expenditures and developments are largely permanent are so obvious that attention need hardly be called to them. We have no right to feel that a building that is to be looked at may serve no other purpose and must, thereupon, be promptly torn down Permanent contact with the beautiful is not too exquisite to bear! Nor may we regard it a breach of hospitality to spend money in the entertainment of our guests in such a way that it will serve in the entertainment of future guests and in our own permanent uplift. We are duty bound to make the most of every dollar contributed. The ultimate good of the community is of first and most serious consideration. The point is not merely to get people here, take what they have and hurry them away blindfolded. What we want to do is to interest the world in our resources, we want them to stay here, invest their money here, and help us to develop the untouched, unparalleled resources that lie at our hands, and we must work to that end.

We must look upon this exposition as something more than a fiesta, a side show, an opportunity for the world to spend some of its pleasure-seeking cash among us. We must look upon it as a renaissance to a broader and fuller acquittal, during the years to follow, of our obligations. Let us frankly acknowledge our deficiencies. We know our docks are primitive, we know our shipping is badly handled, we know that we are divided and that between us and the achievements that are possible there stand jealousy and disunity and the lack of a clear-cut purpose and persistence and vigor of action. Let us acknowledge these things and get into step. The time is past when sectional jealousies and dog-in-the-manger policies can be permitted to dominate, when half-hearted support, not because we do not profit much but because the other fellow profits more, can be tolerated. The future of the entire community demands that all men, all interests and all sections should enlist their enthusiastic boost to a common enterprise. We are at heart one community, with one ambition and purpose, to give San Francisco bay the heritage that is hers by nature, commercial supremacy of the West. Any activity that will promote this in the main is a contribution to the entire community. The fair offers a chance to get every shoulder to the same side of the wheel for once and there is no location that could inspire a uniform lift with all the enthusiasm of selfish interest so perfectly as the waterfront. Down-town San Francisco, Oakland, Berkeley, Alameda, the Marin county towns, every one must see its best interests served by holding the fair here.

No one can doubt or deny the inspiration and life the holding of the exposition on the waterfront would be to the waterfront itself between now and 1915, the permanent good for warehousing, free-marketing, exposition and other purposes, the buildings would serve after the fair is over. That it would lead to early installation of modern methods and economy at the docks is most likely. The permanent development of private holdings along the west side of East street that it would bring about would make this section a worthy entrance-way for the great commercial city of the future and be a substantial contribution to the permanent prosperity of the city. To the business section of San Francisco it would mean that the exposition crowds are placed at the very heart of the city. The established restaurant and hotel service gets the custom of the crowds, the legitimate and established business houses secure the trade, and the profits of the trade accrue to the permanent upgrowth of the city instead of being spirited away by nomadic speculators. To the east and north shores it means ready access and the opportunity to reap some of the going benefits of the undertaking, and it may lead to the long-cherished shortening of the ferry trip.

As to the future of the esplanade, a permanent waterfront boulevard will be not only a feature of incomparable educational value to the people of the bay community, but it will be a most attractive feature for sight-seeking visitors during future years. It will be not only the means to the promotion of local interest and pride in the waterfront, but it must constantly lend impetus to new and increasing investment of outside capital. What greater appeal could there be to a man with money to invest than to observe from such a vantage point the substantial and almost unlimited waterfront facilities, the enormous resources of San Francisco as a port and its promise for the future.

The absurd, the pitiful spectacle of expending millions and millions in money and labor, in art, architecture and genius over a period of years for the sake of the temporary, superficial gratification of an unobserving, diversion-seeking people for a few hours or a few days at most, and then of painfully and with much more labor and genius eliminating every trace of it all, is the most unthinkable thing of modern, hard-headed common sense.

Here, moreover, is a fact that is food for additional consideration. Francis B. Loomis is authority for the statement that an understanding has been reached among foreign nations that they will not exhibit in non-fireproof buildings. This means that wood and staff are no longer available for such structures.

Are we to be guilty of the fanaticism of erecting class "A" buildings where they must be torn down after six months' use?

We stand, if not at the turning point in our destiny, at least at the cross roads, and the judgment we display at this time will determine very largely whether we shall go ahead by the long route or by the short one, whether we shall assist or hinder the future we are born to.

The casual observer finds it quite impossible to grasp at first blush any radical breaking away from the accepted plan of things, and it is hardly fair to expect that a large idea, however obviously right and however clearly superior, will be accepted without something of the old dogmatic struggle against swerving the breadth of a hair from the established, conventional, time-honored order.

In the eyes of the world, the Panama-Pacific exposition, if held at San Francisco, will stand for one thing: It will be representative of the enter-

prise, the breadth of vision, and the practical fitness of the Western people to live up to the duties and responsibilities that rest upon them. A midway plaisance, a mystic maze, temporary architecture, landscape gardening with a fence around it, stereotyped exhibits and an hour a-hang of a strap—these things are characterless, they can be produced anywhere.

It is San Francisco the rebuilt city, the commercial metropolis, that the world will come to see, and San Francisco's waterfront, this more than all her other possessions must be the inspiration of her visitors. If she allows this to remain primitive, antiquated, unappreciated and undeveloped, she cannot hope that the world will take away a feeling of her fitness in her stewardship.

A waterfront exposition is feasible architecturally and structurally. The best architects and engineers of San Francisco have so declared it. Sufficient space is available for it, as much floor space as was used for Chicago's mammoth fair. The time is ample for its accomplishment—indeed, we who have seen a whole city rise out of its ashes in less time than there is for this, should not be dismayed at this undertaking.

If we do this thing we will set a new ideal, we will fix a new mark in exposition making. We will put the expositions of the future out of the realm of spendthrift speculation and give to them a broader, higher, worthier meaning.

Are we big enough to do it?

Description of Waterfront Plan

By ERNEST COXHEAD, Architect.

FIRST, it is proposed to build a permanent elevated boulevard over East street, San Francisco, from end to end, the full width of the street, and over the seawall, making a total width of about 300 feet, this boulevard to be pierced its entire length by light courts to street below, except at intervals for crossings, all teaming and railroad travel on East street below being uninterrupted. The space below the boulevard, along the seawall, is to be used for permanent warehouses, railroads, etc., as suggested in the Burnham plan.

Telegraph Hill and Rincon Hill are to be used for exposition buildings, those on Telegraph Hill, perhaps, to be permanent.

An elevated inclined causeway is to be temporarily constructed for exposition purposes, to connect Telegraph Hill with the elevated boulevard at the south end of the ferry; while a temporary elevated causeway over Bryant street from East street boulevard to Rincon Hill, will give rapid transit by electric car and automobile from Rincon Hill to Telegraph Hill, from which two points north and south, as well as along the entire length of the boulevard, visitors can view the beauties of the bay and the commerce and shipping possibilities of San Francisco port.

It is possible to build almost the entire exposition on State and city land, and that without encroachment or interruption to shipping conditions, temporarily or otherwise.

Two vacant blocks on Rincon Hill are to be temporarily leased; one block north of the present city park on Telegraph Hill to be purchased by city. It may or may not be necessary to temporarily lease four or five small blocks north of Telegraph Hill to enlarge the scope of the exposition buildings.

Without using wharf buildings, over 3,000,000 square feet of floor space is available for exhibits. Light courts along the boulevard can be made available for entrances and exits to the exposition, with pay gates at the bottom of the steps to the street below.

A tunnel is proposed through Telegraph Hill, continuing Montgomery street through to the north end of East street, with elevators to the art buildings at the top of Telegraph Hill. This being a permanent asset, could be undertaken by the city.

Permanent wharves of concrete are to be built, following the present plans of the harbor commissioners, and contemplating in their construction the use of the $9,000,000 recently voted by the State for these improvements, as far as possible.

Any wharf buildings which may be built for exposition purposes shall be so constructed as to be used afterwards as permanent wharf sheds.

The Ferry building is to be completed at the north and south ends with additional ferry slips, as contemplated in the completed plans of the harbor commissioners.

An elevated boulevard which crosses Market street permits of uninterrupted trans-bay business travel through the Ferry building during the exposition, and in the future, after the exposition, it will aid in the solution of the serious problem of congestion and dangerous crossings at the foot of Market street.

The Southern Pacific Railroad, at Third and Townsend streets, is to be continued two blocks to Rincon Hill, with its transportation building below the causeway; also Santa Fe to unite at same point.

All streets abutting on the boulevard, north and south of Market street, are to give direct street car service to the exposition and assist in avoiding congestion.

The nave of the Ferry building is to be used for exposition purposes, with entrances to the elevated boulevard at the ends and in the center.

The Ferry building is to be used for the administration and reception building—trans-bay service to continue uninterruptedly on the ground floor and through the second floor waiting-room as at present.

The Telegraph Hill building, and buildings below to the north, are to be used as art and science groups, while the Rincon Hill buildings are to be used as the commerce and agricultural group.

Buildings on the boulevard immediately north of the Ferry building, and possibly two wharf buildings facing on the water court opposite, are to be used for the liberal arts group.

The buildings on boulevard immediately south of Ferry building, and possibly two wharf buildings facing onto the water court opposite; are to be used for manufacturers' group.

A colossal statue on a Doric column to be erected on Mission Rock, will represent Liberty, and a column in the court of honor on the top of Telegraph Hill, is to represent Victory and the completion of the Panama Canal.

The large court facing north, below Telegraph Hill, is to be named Plaza Panama, while the court facing south on Rincon Hill is to be named Plaza Colon. The elevated boulevard over East street, from north to south, is to be named "The Canal," instead of "The Midway," and the inclined causeway to Telegraph Hill is to be named "Culebra Cut."

A glance at the plan of the waterfront exposition site suggests a miniature map of the entire Panama Canal.

The Panama-California Exposition in San Diego

John C. Olmsted

JOHN C. OLMSTED, senior member of the Boston firm of architects, is in San Diego, Cal., under contract to the Panama-California Exposition, to design the general character of the permanent buildings of the exposition and to advise regarding the landscape features of Balboa Park, which is to be the site of the fair. The latter should not be confused with the proposed Panama-Pacific exposition to be held in San Francisco.

It is Mr. Olmsted's plan that the buildings shall, as far as practicable, follow the Spanish-Californian style, the dominant characteristics of which are the low, square tower, the arched corridor and the balcony overlooking a patio or open court. This suggestion is in consonance with the Californian tradition and the actual history of San Diego, which was the first settlement by white men in what is now territory of the United States. The first of the "Mission" churches was built in San Diego by the Franciscans, under direction of Father Junipero Serra in 1769, and the composite architecture then adopted has persisted to the present time, manifesting itself in many modified or elaborated forms throughout California, and especially in the southern part of the State, where its outlines and color seem to fit the environment with peculiar adapability.

The first buildings to be erected under the supervision of Mr. Olmsted will be an auditorium, an arts building, a modified Greek theater and a stadium. These, with their gardens, courts and grounds, will occupy about 100 acres and will form the nucleus for the further improvement of the park, which contains 1,400 acres of land admirably fitted for park purposes. The area is high land overlooking the Pacific ocean, broken by numerous canyons and little valleys, on the crests of which are broad mesas and spacious slopes which it is the intention of Mr. Olmsted to terrace in the Spanish and Italian manner, preferring this style as more in keeping with the climatic and topographical conditions than the English method of open lawn surface.

The improvement of Balboa park is preliminary to the Panama-California Exposition to be held in San Diego in 1915, ostensibly in commemoration of the completion of the Panama Canal, but practically as a means of exploiting the resources and opportunities of the Southwest—Mexico, Central and South America. The situation of San Diego is eminently fitted for an exposition of this character. It is the first port of call in United States territory north of the Panama Canal on the Pacific Coast, and it is the nearest point on Pacific tidewater for the cities of the Middle West and the Southern States. It is the natural distributing point for the west coast countries of Mexico, Central and South America, whose commerce seeks an

outlet in the United States. Moreover, at the present time the San Diego exposition is the only one actually in being. The citizens of San Diego have subscribed a million dollars as a fund for carrying on their enterprise, and the city of San Diego has issued bonds in the amount of a million more for the purpose of defraying the expense of improving their park as a site for the exposition and the erection of the permanent public buildings now being designed by Mr. Olmsted.

No better selection could have been made than the appointment of Mr. Olmsted for this work. The father of Mr. Olmsted laid out Central Park, New York City, in 1857, and established his firm of architects in Boston in 1881. Under the supervision of this firm much of the designing of the Columbian exposition at Chicago was accomplished; and the same firm had charge of similar work at the Lewis and Clark exposition in Portland and the Alaska-Yukon exposition in Seattle. It was chiefly because of his personal familiarity with Pacific Coast conditions and requirements that Mr. Olmsted was selected as the supervising architect of the Panama-California exposition.

Among the notable parks throughout the United States that the firm of Olmsted Brothers has laid out are the following:

New York—Morningside park.

Brooklyn—Shore drive, three miles along harbor front; Ridgewood park, Brooklyn Forest drive, and Dyker Beach park.

Buffalo—South park (botanical garden), Cazenovia park, Black Rock park.

Chicago—Jackson park, World's Fair site; Grant park, 250 acres; Marquette park, 320 acres, and thirteen lesser parks.

Milwaukee—Lake park, Westside park, River park.

Louisville—Iroquois park, Cherokee park, Shawnee park, Southern parkway.

New Orleans—Audubon park.

Charleston, S. C.—Chicera park, Wade Hampton park, exposition site.

Washington—United States capitol grounds, as aide to his father, Frederick Law Olmsted; National Zoological park.

Wilmington, Del.—Cadwalader park.

Newark, N. J.—Branch Brook park, Weequahic reservation, Orange park, Eagle Rock reservation, South Mountain reservation, Anderson park.

Newburg, N. Y.—Downing park.

Bridgeport, Conn.—Beardsley park.

Rochester, N. Y.—Genessee park, Highland park, Seneca park.

Watertown, N. Y.—Pinnacle Hill park.

Hartford, Conn.—Keney park, South park, Pope park, Riverside park.

Fall River, Mass.—North park, South park.

Cambridge, Mass.—Fresh Pond park, Cambridge field, Rindge field, Charles River drive.

Boston, Mass.—Stony Brook reservation, Charles River reservation, the Fens, the Riverway, Leverett park, Jamaica park, Arborway, Arnold Arboretum, Franklin park, Dorchesterway, Strandway, Marine park, Wood Island park, Charles bank, Charlestown Heights, Franklin field, North End park.

Seattle, Wash.—Volunteer park, Lincoln park, Woodland park, Green Lake park.

Spokane, Wash.—Adams park, Liberty park.

Holyoke, Mass.—Elmwood park, Riverside park.

Atlanta, Ga.—Piedmont park, L. P. Grant park.

Frankfort, Ky.—State capitol grounds.

Lexington, Ky.—Woodland park.

Hotel for Jacob Z. Davis Estate Company, San Francisco
L. B. Dutton, Architect

Splendid Hotel for San Francisco

THE Jacob Z. Davis Estate Company has perfected plans for a first-class hotel building to be erected at the southeast corner of Kearny and Sutter streets, San Francisco, from plans by Architect L. B. Dutton.

The building will be of best Class "A" construction, with steel columns, beams and girders and reinforced concrete floors, making an absolutely fireproof building throughout.

The exterior will be pressed brick on three street fronts, with galvanized iron cornice. The exterior of the first story will be entirely of plate and prism glass, giving the utmost possible amount of light for stores, which are designed to occupy the entire first story, except nineteen feet on Kearny street, reserved for the hotel entrance. The latter will be protected by a large glass marquise, covering the entire sidewalk in front of the hotel entrance.

An ample hotel lobby, writing-room, reading-room, office, etc., will occupy the central portion of the first story. The basement will be occupied by a large cafe, with an entrance from Sutter street, and also from the main lobby of the hotel.

Each floor, from the second to the eighth, inclusive, will contain 32 large-sized rooms, 19 of which will have private baths, making a total of 224 rooms, and 133 private bathrooms for the entire building.

Planning a City from the Standpoint of a Landscape Architect

By WILBUR DAVID COOK

"PLANNING a City from the Standpoint of a Landscape Architect." The subject is too broad to be covered in the limited time at my disposal. Nor would I care to tire you with the thousand and one technical details that enter into the problem of city planning. With your indulgence, then, I will try to give you a few general ideas on the larger questions of our subject.

Strictly speaking, city planning is not a new science; but it is comparatively new in this country. In general, we have to go to the Old World to find cities which have been planned on the principles upheld by the landscape architect. The landscape architect's city is planned after a composite of all that is best in the Old World cities, revised and brought down to date to meet modern requirements.

The fundamental principle of scientific city planning as practiced by the landscape architect of today, is first, convenience; second, beauty. Your modern city must be convenient to be successful. The theoretical city would be planned in a circular form, with all points in the outskirts equally distant from a common center, and with radial boulevards in every direction, like spokes of a wheel, connected by encircling drives about the circumference.

Paris, on account of its peculiar situation, being surrounded by three walls of fortification, was forced to adopt a radial and encircling street system to facilitate the handling of troops from the center of the city to the fortifications. Afterward this was found to be so practical for the ordinary city traffic that other cities, notably Berlin and Moscow in the Old World, followed its example. Thus was established a principle which is being applied, as far as local topography will permit, in the readjusting of our street systems to meet modern traffic conditions.

It is true that the distinctive beauty of any city is its natural topography. Here, indeed, lies its individuality, and the successful city planner, or civic expert, as we call him now, is the man who preserves and accentuates the individuality of a city while enhancing its beauty.

The earliest example in this country of city planning along scientific lines occurred during President Thomas Jefferson's administration, when Major L'Enfant, a French army engineer, was commissioned to prepare a plan for the city of Washington. There is no doubt in my mind that Jefferson played an important part in preparing this first city plan, for he was an architect of no mean ability, had some knowledge of engineering, and was somewhat of an artist. The Capitol and White House were placed in accordance with these plans, but no further attempt was made to carry them out for more than one hundred years. For some unexplained reason the plans were never paid for, and Major L'Enfant died of a broken heart and was buried in a pauper's grave.

The first real impetus given to American city planning undoubtedly occurred during the World's Fair at Chicago, in 1892. This exposition did more to educate people to appreciate civic beauty than anything before or since. It came close to being the ideal city of the landscape architect.

Let me describe briefly the ideal city of the landscape architect. It is planned in conjunction with engineers, architects, sculptors and landscape gardeners. It is a metropolitan and preferably a harbor city. Its approaches

*Paper read before the Southwest City Planning Conference, Los Angeles, November 15, 1910.

by rail and water are attractive, artistic and imposing. Its traffic is centralized, the railroads entering a union station below grade and the electric systems centering at the same point, also by means of subways. Its business streets are wide, clean and well lighted and paved; the sidewalks are wide; the residential section is well parked; a uniform system of street trees, under the care of a city forester, is to be found. The parks, playgrounds, plazas and parkways are well designed, conveniently placed and well cared for. The park system is connected by wide parkways or boulevards shaded by trees and accessible by foot and electric cars.

The entire metropolitan park system should be under the control of an active, wide-awake park commission appointed for a term of years, acting in conjunction with a consulting landscape architect. The commission should be free from political influence and backed with sufficient funds to make their work effective. No really modern harbor city is without a beach reservation for its municipal bathhouse. In passing, I can not but remark upon the apparent neglect of Los Angeles to secure for the above purpose at least two pieces of beach property before real estate values become so high as to render them prohibitive.

The metropolitan system for the city of Boston embraces all that area contained within a circle with a ten-mile radius from the State house. Metropolitan Los Angeles would have a radius of at least twenty miles from the present city hall, to include the foothills and the seashore.

Not once in a lifetime does the landscape architect have an opportunity to plan an entirely new city along modern lines, embodying all that is convenient and beautiful. But our newer cities now a-building have no excuse for making the same old mistake over and over again. There is no excuse for misplacing our municipal buildings. To make an ideal city out of our present American cities would require some changes in our laws, especially those covering excess condemnation proceedings. The best city improvement plan conceived by our civic experts can be completely blocked by a few selfish individuals—witness Baltimore and San Francisco.

As a nation, we owe an immense debt of gratitude to some of our landscape architects; to Frederick Law Olmsted for the landscape development of the Chicago World's Fair, and the city of Washington according to L'Enfant's plan; to Charles Eliot for the first metropolitan city—Boston, with its reservations for the city's welfare—and to Daniel H. Burnham, architect, for the improvement of Manila and plans for San Francisco and Chicago.

The landscape architect's ideal city is not a city improvement plan developed in a month's study, for no city can be comprehensively replanned in less than sixteen months or two years. To be of value, a plan must first of all be practical; every business interest must be considered; its future growth and present needs must be studied. A comprehensive plan is of the utmost value to a city if only to point out land which must be acquired for its subsequent development. The improvements on this land may be deferred until needed. It goes without saying, that no landscape architect plans for city slums; but he seeks to have open spaces for light and air in the poorer quarters where people must necessarily live more closely together.

Only since 1896 has it been possible for an American student to take up the study of landscape architecture in our colleges. In that year Harvard University opened the first landscape course in the United States. Previously, instruction could only be obtained by going into the office of a practicing landscape architect. This present year, for the first time, a course in city planning has been added to the Harvard curriculum, and

landscape architecture is recognized as a fine art. I would like to see more of our young men take up this interesting work. A wave of appreciation for work of this sort is sweeping over the country; public interest is already awakened, and there is plenty of room for bright young men. Only a very limited number of men—possibly a hundred—are engaged in this work at the present time. Our American Society of Landscape Architects numbers but sixty members.

A large number of cities are being replanned and improved at the present time. The list includes Washington, Cleveland, Baltimore, Detroit, Chicago, Denver, Norfolk, Boulder, Colo., and our own coast cities of of Los Angeles, San Francisco, Seattle, Portland, San Diego and Oakland. We have come to realize that poorly planned cities are expensive, and that a city rightly laid out is a good investment, for it affords the maximum facility in handling all kinds of traffic. Added to the question of utility is the question of beauty. The standard of our citizenship can not help but rise when we make our cities more healthful and beautiful places in which to live.

* * *

Advantages of Redwood for Building Purposes

WHILE the general reading public is more or less acquainted with the fact that redwood timber is a product of the State of California, it is perhaps not widely appreciated that the growing redwood trees are practically confined to restricted portions of this State and that they are not found to any appreciable extent elsewhere. There are two species, but perhaps the best known is the Sequoia gigantica or "big trees," which grow only in isolated groves on the western slope of the Sierra Nevada mountains, and while they attain an immense size are not a particularly important factor in lumbering. The Sequoia semper-virens are found chiefly in a narrow belt along the coast of Northern California and are the trees from which the redwood of commerce is obtained. As the name indicates, this tree is apparently "ever living," seemingly immune from the ravages of time or of the many assaults of the elements which menace and all too often prove fatal to less tenacious timber.

These characteristics render the wood one of the most valuable for the manufacture of siding, shingles, porch work and all material for use in exposed places or in a location subject to alternate periods of wetness and dryness. The claim is made that when properly painted it will show less change after years of service than any other known lumber. Owing to its freedom from pitch it will not ignite easily and when burning is readily extinguished. This feature makes it particularly valuable for shingles.

When properly dried, redwood will not swell, shrink or warp. Its freedom from pitch and the fact that it runs almost entirely to upper grades makes it desirable for interior finish. The wood is naturally beautiful and takes a very fine polish. It is easily worked and used extensively in some sections for this purpose. Panels as large as 3 feet wide can be used without shrinking or checking.

Redwood is a satisfactory lumber for painting if its characteristics are understood. It is of a light, straight-grained compact structure and will absorb paint readily. The dark color of the wood makes three-coat work necessary, since the priming coat must be mixed extremely thin to fully satisfy the surface.

The fact that redwood is secured mostly from regions where the railroads do not penetrate has made it difficult to reach and to mill properly. Though easily seasoned the lumber first placed on the market was not

handled properly nor thoroughly dried through lack of adequate facilities. This created a prejudice in some minds that has not been entirely overcome. Now, however, conditions have changed. Capital has been interested and the work is being carried on in a more intelligent manner and with proper equipment. As a matter of fact, redwood is fast coming into its own and is rapidly becoming recognized as one of the most valuable woods used in building. It has been used in the West for years, and is gradually working its way eastward as its merits become known.

* * *

Santa Cruz Federal Building—Supervising Architect Again Ignores California Material

By JOHN AUBURY, State Mineralogist.

THE supervising architect of the Treasury department of the United States is evidently continuing to discriminate against California structural materials, and would seem to be determined to persist in that course, despite the showing that California materials are superior, and that the cost of construction of public buildings would be materially diminished by their use. At the same time the buildings would be more durable. The supervising architect, James Knox Taylor, has sent out revised plans for the Santa Cruz postoffice, and in the specifications it has been made impossible for the producers of structural materials in California to compete. The information has been given to the structural materials men of California, who have combined with the State mineralogist to institute a permanent exhibition of California products for the inspection of architects, builders and owners of real property, in the Ferry building, in connection with the regular mineral exhibit of the California State Mining Bureau.

Architect Knox's plans provide that the marble columns in front of the Santa Cruz postoffice shall be of green-veined statuary marble. There is no marble in the United States, of American production, of this description with the exception of that quarried in Vermont. Consequently the expense will be incurred of bringing the columns clear across the continent, and again an official act will discredit the California marble. The details of the lobby of the structure, as set forth, officially provide that the marble base below screen and below wood panels under windows shall be of Vermont Oriental marble; that the panels shall be of Tennessee gray marble; that there shall be Tennessee gray marble below all cement plaster.

There is a large amount of paneling on the first floor. This, so Architect Taylor dictates, shall be of grey Tennessee marble, red Numidian marble, black marble and white Alaska borders. The panels over the windows in the side elevation will be of Portola marble (the only California marble specified). A strong protest has been sent to Washington by the State mineralogist and the California materials men, all of whom are much interested in seeing that in public buildings in California, at least, this State shall not be made the object of adverse discrimination.

This office has sent out to all builders and contractors, architects and realty owners in the State a circular notifying them that the names and addresses of every producer of California structural materials are on file in the State Mining Bureau, and that the bureau will furnish them to all who are concerned. The fight in behalf of home materials produced at home has been made during a series of years with some success. The California Development Board has adopted resolutions favoring the home products and endorsing our action. The Home Industry League of California is also behind the movement for California materials in municipal and other buildings erected in this State.

Entrance to Twin Peaks Tunnel, San Francisco
Arthur G. Scholz, Architect

Tunnels and Boulevards for Mission District in San Francisco

ARCHITECT ARTHUR G. SCHOLZ of San Francisco, has prepared a unique set of drawings for the beautification of the Mission District, tunnels, viaducts and wide boulevards being included in his pretentious scheme. The plans contemplate an extension of Market street from its present termination at Seventeenth and Castro streets in a direct line to Nineteenth and Douglas streets, the base of the Twin Peaks. From this point a superimposed tunnel will be constructed through the Twin Peaks and issue at the junction of the Junipero Serra, Parkside and Dewey boulevards, the route continuing over the Parkside boulevard to the Great Highway, on the Great Highway around Sutro Heights to Cliff avenue, on Cliff avenue to Point Lobos avenue to Seventh avenue; from Seventh

avenue across Golden Gate Park to H street. Four artistic viaducts are designed to extend over Golden Gate Park between H and Fulton streets.

To serve the purpose of direct intercommunication between the several districts of the city, as well as the artistic purpose of a boulevard chain, it is proposed to run an intermediate tunnel exactly through the geographical center of the city, the central point of the Twin Peaks, from the junction of Seventh avenue and H street. This would be tributary to the main tube through the peaks from Nineteenth and Douglas.

This intermediate tube would extend easterly to the vicinity of Thirtieth and Castro street, whence a viaduct would be constructed to Mission street opposite Crescent avenue, thus connecting by a direct route the Sunset and Richmond districts with the Mission district, and via the main tunnel, with the heart of the city. The viaduct would be on an exact grade with Mission street at Crescent avenue.

At this point it is suggested that the Holly Park be enlarged by parking the blocks between West and Holly avenues and Crescent avenue and Mission street just in front of the College Hill a broad avenue to be constructed through the park to the junction of Somerset and Wayland streets, thence running northeasterly over Wayland street to Oak avenue and through acreage property to the Bay Shore cut-off where a depot is planned for the convenience of residents in the Richmond, Sunset, Mission, Potrero and South San Francisco districts, who would be spared the necessity of traveling to Third and Townsend streets.

From this point to the boulevard would continue to Railroad avenue, over Railroad avenue to Kentucky street, over Kentucky street to the Islais Basin, thence northerly on Kentucky street to Third and over Third to Market.

Instead of continuing over Parkside boulevard in a westerly direction from the mouth of the main through the Twin Peaks, the easterly branch of the tunnel would extend over Ocean avenue to Mission street, thence east of Mission street over Russia avenue, Russia to La Grande, La Grande to Wayland, connecting with the mediate tunnel-viaduct which joins Wayland street and continues to the Bay Shore cut-off. Another route in the same direction would be over France avenue from Russia to Sunnydale avenue to Milliken street, over Milliken to San Bruno and over San Bruno to Railroad avenue.

Among the many smaller boulevards leading to the main system will be Army street between Kentucky and Mission streets; Nineteenth avenue between H street and the Parkside boulevard; Van Ness avenue from Lewis street to Market; Dolores street from Market to Mission; the Junipero Serra Boulevard from Ocean avenue to Mission street and the projected extension of Charter Oak avenue.

The Association's committee has made several additions to these plans so as to serve the general public interest.

The committee proposes that Valencia street at its junction with Twenty-sixth, to be extended in a southwesterly direction so as to join the easterly branch of San Jose avenue at a point midway between Army and Twenty-seventh streets. In this way Valencia, Dolores and Guerrero streets would converge at Mission street directly opposite the Holly Park, as enlarged in the original plan.

From this point the contour of San Jose avenue will be followed to the Ocean boulevard and direct connection with the Sunnyside district will be made with San Jose avenue and at the same time with Dolores boulevard and the main boulevard system. This will be done via the Ocean boule-

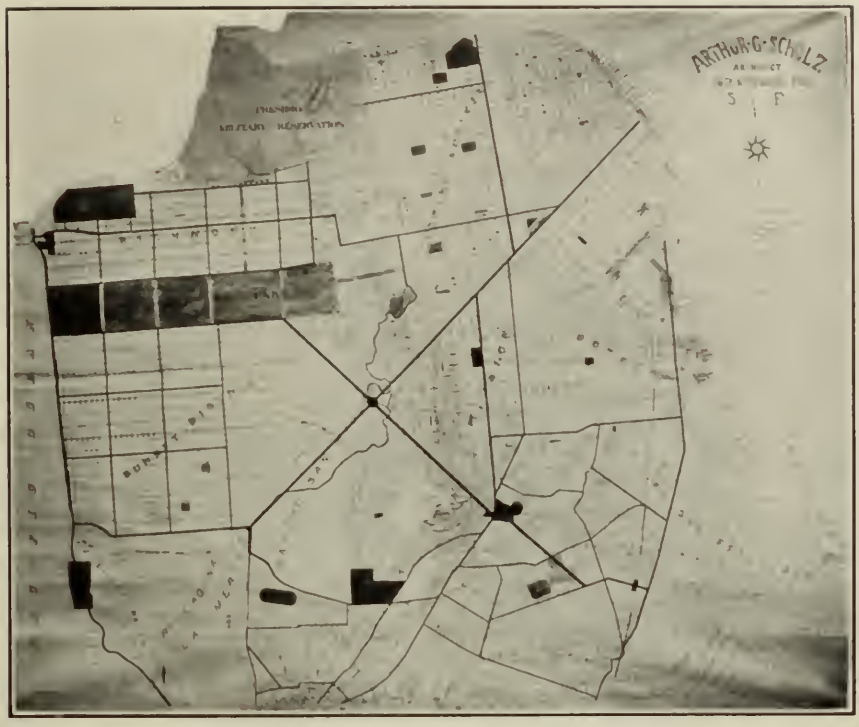

Diagram of Boulevard System to Encircle and Gridiron the Entire City
Arthur G. Scholz, Architect

vard and also by way of Sunnyside avenue. The chief advantage of these extensions will be their accessibility to the Balboa Park at San Jose and Ocean avenue, the second largest park in the city and county.

The committee also suggests the extension of the Great Highway from its junction with the Parkside boulevard through the United States Military Reservation and the lands of the Spring Valley Water Company to the county line. They also prescribe the location of the four artistic viaducts to span Golden Gate Park, between Fulton street and Lincoln way, at points opposite Seventh, Twentieth, Thirtieth and Fortieth avenues.

As the Golden Gate Cemetery has been acquired by the city to be converted into a district park, the plans imply the extension of Golden Gate avenue through the former burial grounds to Parker avenue, the course to be continued over Parker avenue to Point Lobos avenue, one of the principal branches of the main boulevard system.

The Buena Vista Park is connected with the intermediate tunnel-viaduct between the Sunset and Mission districts and the Bay Shore Cut-off by the way of Buena Vista avenue, Piedmont avenue, Ashbury street, Lincoln avenue, which are all practically extensions of the Corbett road, one of the first boulevards of the city and county system. These driveways join Corbett avenue at Twenty-sixth street, Corbett avenue continuing from this point in an irregular direction to the junction of the Junipero Serra, Parkside and Dewey boulevards.

The connecting roads between the old El Camino Real and the Junipero Serra boulevard are Garfield and Grafton streets to Harold avenue and thence to the Ocean avenue boulevard, also Worcester and Sagamore

streets, thence over Sickles avenue to the Mission road. These two branches will connect by a direct route the Ingleside, Ocean View and San Miguel districts.

The large settlements between Mission street, the county line and the easterly shore of the bay are provided for with certain boulvards which have already been obtained through right-of-way grants obtained from owners of acreage property. These include the extension of France avenue through the Somps tract to connect with Milliken street in the Visitacion Valley and the La Grande-Madison boulevard which joins Silver avenue and the newly constructed thoroughfare over Fifteenth avenue, south, which brings into direct contact the Mission and South San Francisco districts by providing an intermediate roadway between Kentucky street and San Bruno avenue.

The Presidio and Potrero are brought into direct contact in the plans of the committee by means of the proposed tunneling of the Potrero Nuevo hill from the junction of Twentieth street and Potrero avenue to the easterly continuation of Twentieth street. This would provide access for a street railroad line from the seawall to Twentieth street, over Twentieth street to Valencia street and over the proposed line of the Devisadero street-Mission crosstown railroad to the Potrero by way of Devisadero street.

It is the intention of the committee to continue in the policy adopted heretofore by the Mission Promotion Association of bringing about part by part the betterment of the good roads system throughout the city and thus accomplishing by degrees what would otherwise prove an undue burden on the taxpayers if put into effect as a whole.

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Sonoma County's Wonderful Tower

"THE City of Pisa hasn't anything on Sonoma county, California," remarked R. K. Parrott, who lives near Santa Rosa.

"Pisa has her leaning tower and we have a living one. This tower is 100 feet high and stands on the top of a 300-foot hill. The remarkable feature of it is that the supports of the tower are four young redwood trees. These stand exactly at the four corners of a fifteen-foot square. They could not have been placed more accurately in position if they had been planted for the purpose. They were originally about 150 feet high, but the tops were cut off 100 feet from the ground in order to form a support for the upper platform, which also serves as the roof.

"This tower is divided into six stories, each surrounded by a substantial railing such as is used on verandas. The floor of each story rests on beams anchored to the tree trunks by cables and bolts. A stairway leads from one floor to the other. The still living columns which hold this tower are covered with vines, which add to the picturesque appearance of the structure. From the top the visitor has a view of the surrounding country for many miles. The tower is one of the show places of our part of the country."

A Municipal Water Tower of Reinforced Concrete

By MAURICE C. COUCHOT, C. E.

THE CITY OF PALO ALTO has recently completed a municipal water tower, which is said to be the largest reinforced concrete tank of its kind in California. It has a capacity of over 150,000 gallons; the lowest point of the water is forty feet from the ground, and the highest seventy feet.

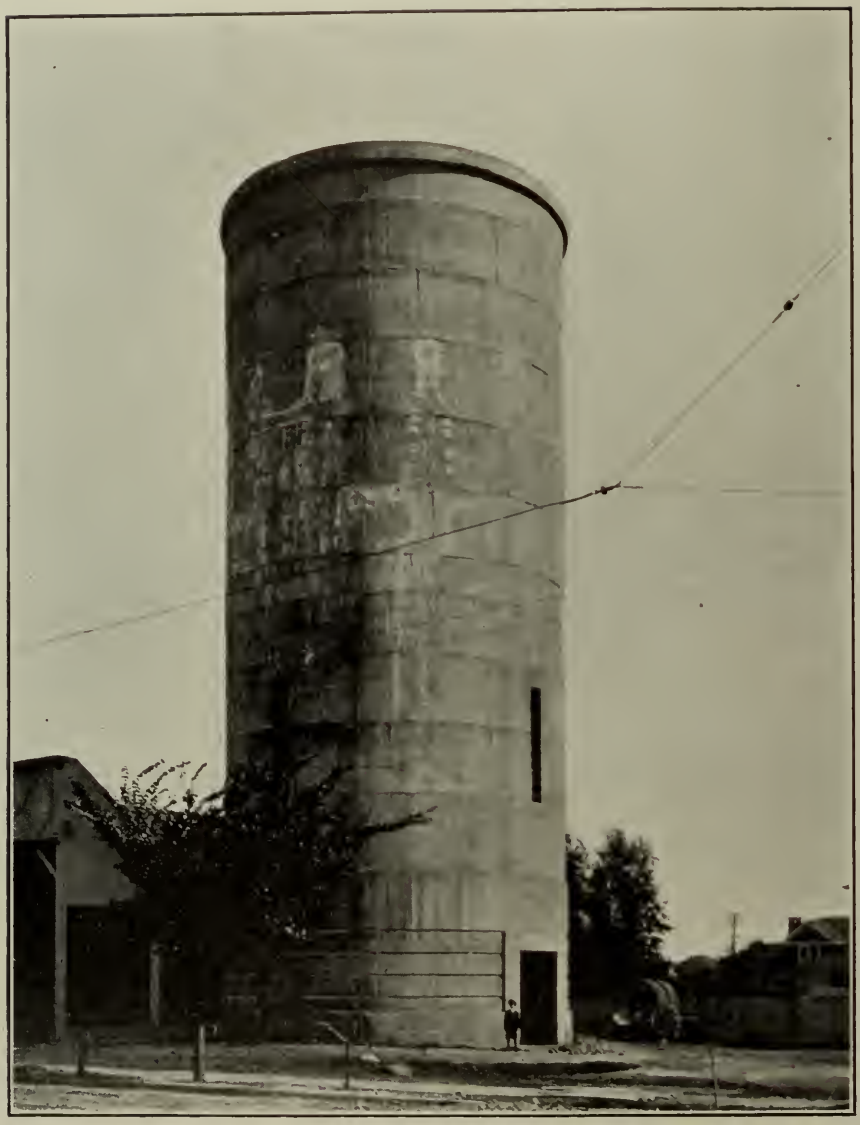
When the city of Palo Alto advertised for bids for a reinforced concrete stand-pipe, it was stated in the tender that alternative designs from the one submitted by the city engineer would receive consideration.

The city of Palo Alto, in Santa Clara county, lies in a practically flat country, and a stand-pipe would not offer the same advantages as if located on a hill. It then occurred to the writer that a design as here shown would offer certain advantages from the point of view of economy.

Bids were received and it appears that a hemispherical bottom steel tank on four columns was the cheapest; also, three other designs in reinforced concrete were submitted, which were cheaper in price than the design offered by the firm of R. Keatinge & Sons, but upon examination by the City Engineer, Mr. J. F. Byxbee, it was found that these designs were either weak, structurally, or did not offer the same advantages as the one submitted by Keatinge. The contract was accordingly let to Keatinge for $7,600.

The structure consists primarily of a circular tank resting on a cylindrical shell of a uniform thickness of 9 inches, reinforced with ½-inch square bars, placed 12 inches in both directions. The foundations are also circular, 4 feet 6 inches in width, reinforced with ½-inch square bars, placed 6 inches in both directions and distributing the total load of the tower and water on the soil at a pressure less than 3500 pounds per square foot. The soil is a hard clay loam and no settlements were observed during the filling of the tank. The tank proper consists of the continuation of the shell; the thickness of the walls varying from 10 inches at the bottom to 6 inches at the top, which has a lip 18 inches high and 12 inches thick, receiving the weight of a very light dome, used for covering the tank. This dome is constructed of ninety-four ribs made of 1¼-inch by 1¼-inch by ¼-inch, tees resting on a 2½-inch by 2½-inch by ¼-inch angle ring, taking up the trust of the dome. Over these ribs ⅜-inch bars are placed horizontally, 12-inch center; then twenty-four gauge diamond mesh expanded metal lath, and this received two coats of cement mortar—to the thickness of 2½ inches. This dome, as constructed, is very efficient, has a minimum weight, and is very economical.

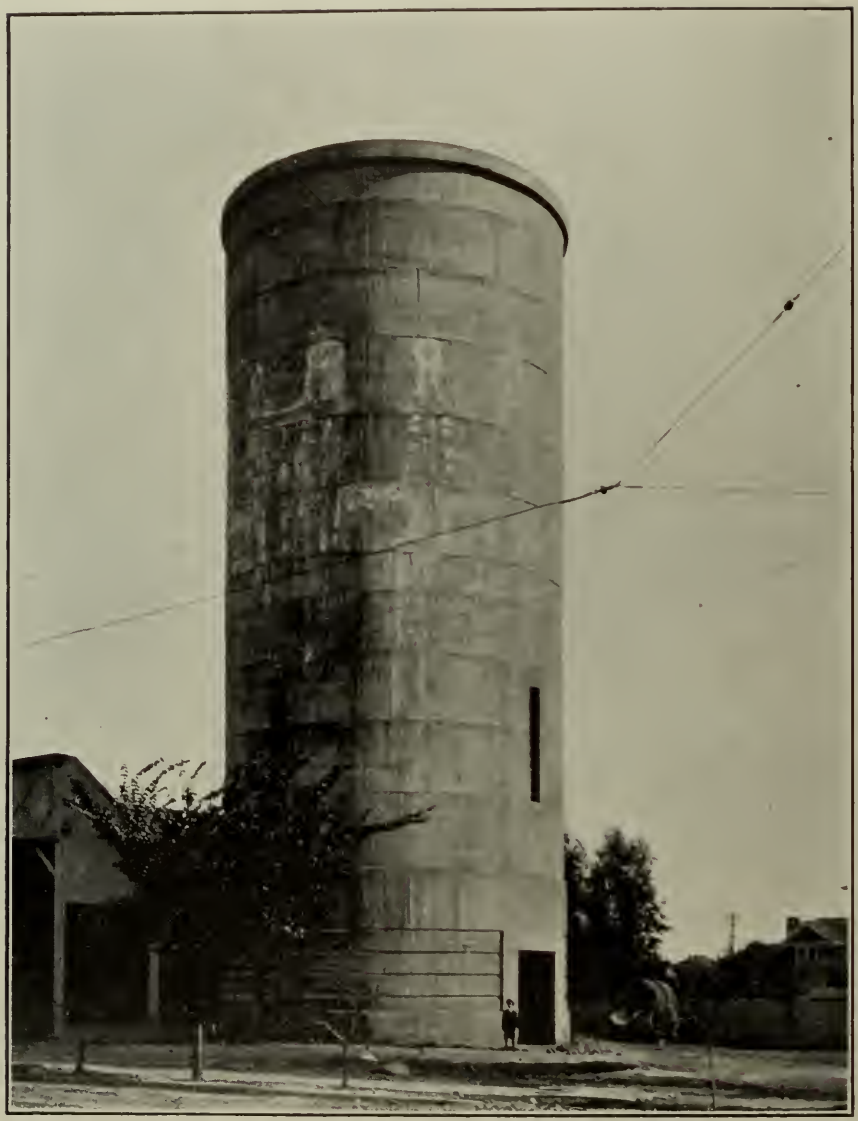
The bottom of the tank is also a dome, and its design is the most critical portion in all the structure. In this instance there is no hoop tension in the dome; the concrete is at all times and under all conditions under compression. To take care of the total trust, sixteen 1-inch square bars lapping 40 inches and held with two Crosby clips at each joint are placed at the outside edge of the dome, and are the longest bars that could be had in the market, therefore, saving joints. The joints alternate. There is no other reinforcement in the dome. The reinforcement in the shell of the tank consists of ¾-inch, ⅝-inch and ½-inch square bars of deformed section, placed as shown on plans. The specifications for the concrete calls for a mixture of 1-2 ½-5 for the portion below the tank and 1-2-4 for the tank proper. The best of material and the greatest care were used in the construction of the tower. The compression on the con-



Reinforced Concrete Municipal Water Tower, Palo Alto, California

Progress Work, Concrete Water Tower, Palo Alto, California

Reinforcing Rods for Concrete Water Tower, Palo Alto, California



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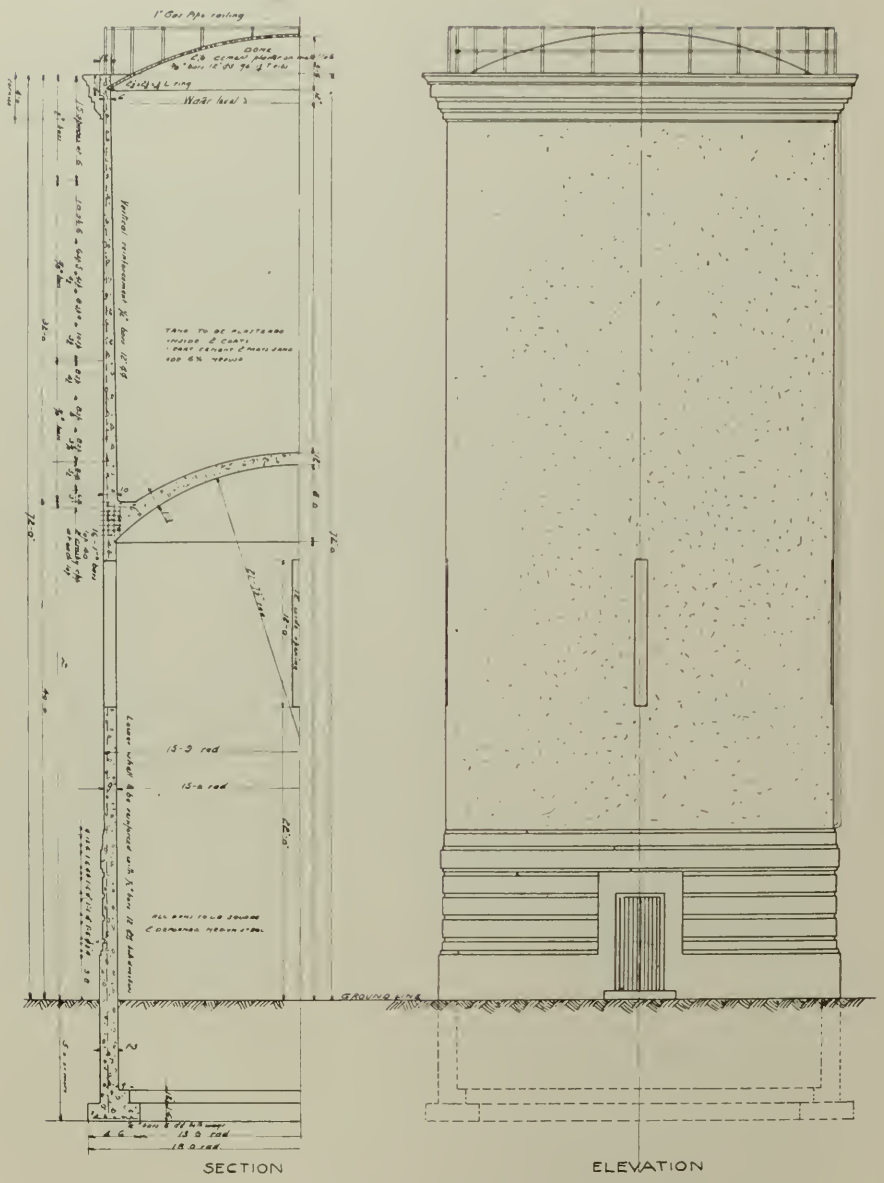


Sectional View and Elevation, Reinforced Concrete Tower, Palo Alto, California

crete of the dome at the lowest point does not exceed 150 pounds per square inch. The compression on the lowest part of the tower shell does not exceed 450 pounds per square inch. The tension in the steel is kept below 16,000 pounds per square inch. To insure water tightness of all concrete in the tank proper, 8% of hydrated lime were added to the cement in mixing.

The tank inside has received two coats of cement plaster in the proportion of one of cement to two parts of sand, to which was added Medusa water proofing compound in the proportion of 6% of cement used. The tank is entirely water tight, and at the present writing has been in use over four months; some of the stains showing are due to alkalies in the water, also to some sweating of the water, which will in time disappear.

While for some reason of economy the City Trustees have done away with the outside coating of pebble dash, plastering of the lower ring, cornice and top railing, it is hoped by the writer that at some future time the City Trustees will complete this work, as it will greatly add to the appearance of the tower.

It is the intention to let ivy climb round the tower. There is no objection to let it grow to the height of the tank, but it should be kept away from the tank proper by all means, as ivy is a very insidious plant.

The lower portion of the tower is to be used as a pumping station at some future time. This tower, as already stated, was built for $7,600, which is a very low figure, and as it will not require hardly any maintenance or repairs, it is considered a good investment for the city. It is fireproof, and it will keep the water in a better condition and cooler than a steel tank. The building of the forms was let entirely to the contractors.

The writer's opinion is that it will stand an earthquake of the same magnitude as the one of April, 1906.

Accepted Design for Reinforced Concrete Hall of Records, Hollister, California
C. H. Russell, Architect

Perspective Washington Grammar School Building, Alameda, California
Louis S. Stone, Architect

Alameda's Splendid New School Buildings

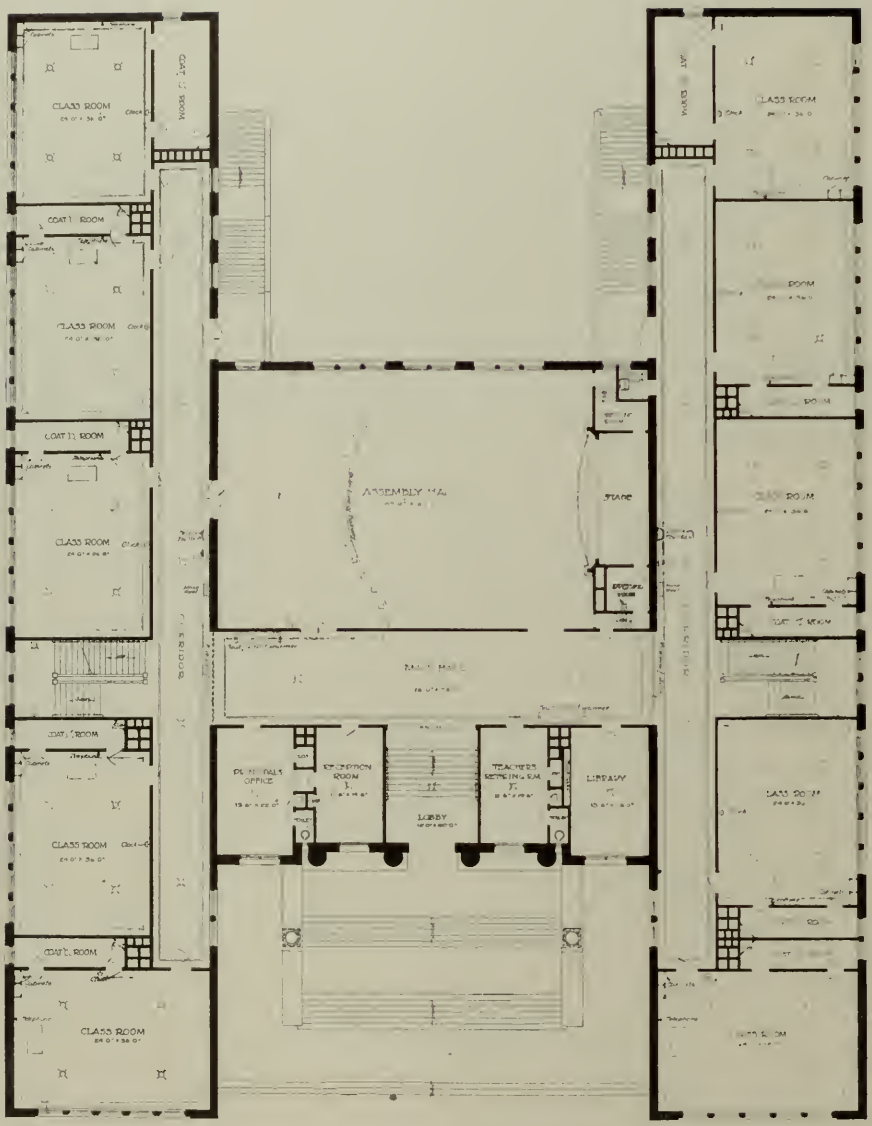
By WILLIAM C. WOOD, Superintendent of Schools

THE BOARD OF EDUCATION of the city of Alameda is erecting two large, substantial school buildings, which are intended to be as modern in their appointments as studious and careful planning can make them. The larger of these buildings, which is to replace the old Haight school, was designed by Architects Cunningham and Politeo of San Francisco. The Washington school building was designed by Louis S. Stone of Oakland.

The Haight school building, which will face Santa Clara avenue, is in the form of the letter H, and contains twenty class-rooms, each twenty-four by thirty-two feet. There are ten class-rooms in each wing, five on the first floor and five on the second floor. The central portion of the building contains an auditorium forty-four feet by seventy-two feet, an office, reception room, library, teacher's room, retiring room, teacher's lunch room and a laboratory twenty-two by thirty-two feet.

In the basement are situated a manual training room with a total floor area of 1600 square feet, domestic science quarters, including kitchen, pantry, sewing room and experimental dining room with a total floor area of 1800 square feet; play rooms, lunch rooms, bicycle rooms, store rooms, boiler room and toilets.

The Washington school building, to be erected at the corner of Eighth and Santa Clara avenue, will be in the form of a shortened H, and will contain twelve class rooms. In the basement will be placed the various accessory rooms as in the Haight school building. Six class rooms, each twenty-four by thirty-two feet, will be placed on each of the main floors. In the north wing, facing Santa Clara avenue, will be the auditorium, capable of seating 700 people. This will be used not only for school work, but for public lectures and neighborhood meetings as well. The office and library will be located on the first floor, opposite the entrance.



FIRST FLOOR PLAN

SCALE $\frac{1}{8}$ INCH = 1 FOOT.

First Floor Plan, Haight School House, Alameda, California

Cunningham & Politeo, Architects

Both buildings will be of modified classical design, and will be built of brick with steel framework where necessary. The Washington school will be faced with red Los Angeles pressed brick, with basement walls, pilasters, columns, parapet walls, and cornice frieze in cement. The exterior of the Haight school building will be finished with white cement plaster over brick.

Both buildings will be equipped with a modern plenum system of heating and ventilating, including automatic regulation. The furnaces will be heated by means of crude oil burners, and the buildings will be cleaned by means of mechanical dust suction plants.

In planning the buildings special emphasis was placed on the lighting features. The aim has been to so arrange the class rooms that they will receive the direct sunlight at some time of the day, the reason for this being that sunlight is considered the most universal disinfectant. In the Haight school eight class rooms have east light, eight west light and four south light. In the Washington school four class rooms have east light, two south light and six west light. The manual training and domestic science rooms are also well lighted in both buildings.

One of the distinctive features of the Alameda buildings is the "fresh air rooms," of which there are four in each building. The windows are fitted with Bexhill casements, which allow the entire window surface to be open for the admission of fresh air. These rooms are planned for children who are physically below par.

* * *

Cobblestone Houses

WEALTHY people in the eastern part of Pennsylvania have adopted to a large extent cobblestones as a building material, and a number of handsome and costly structures of this nature have been built recently in the vicinity of Philadelphia. The mountain districts of Pennsylvania abound in the material for the erection of structures of this character, and one of the noted architects of the country makes a specialty of designs for bungalows and summer houses erected out of this material, heretofore used exclusively for paving purposes.

The evolution of cobblestone building in Pennsylvania is an interesting story. The builders tell us there is nothing common or useless in the eyes of the optimistic man, who is able to find utilitarian and artistic possibilities in everything nature creates. For many years the farmer, with back-breaking toil, gathered and heaped the stones in great piles, with anathemas, and in these piles the snakes made their nests.

Then came the architect one day who was not bound with the fetters of conventionality. In his search for that which was novel and unknown he came across one of those piles, and while he sat on a stump and mused on the heartrending toil it represented his mind was flooded with inspiration. The plans for the next house he drew provided for a wide porch, with supports and posts built of these same rough and generally useless stones. When the house was finished it satisfied both his artistic soul and his patron. Straightway he proceeded to build another house with a great stone chimney on the outside. This, too, he pronounced good, and so the use of the cobblestones came into excellent repute among the architectural clan. The stone piles melted, the snakes were forced to find a new refuge in which to nurse their brood; even the stone walls which the farmers of

old had reared with infinite patience and labor because they had nothing else of which to build fences were carted away to become building material in the hands of masons.

A stone porte-cochere is another suggestion which is growing in favor both in frame houses and the house that is not of wood, but of plaster, with a tile roof, and the combination seems equally effective.

In addition to the use of cobblestones as an integral part of the house, many and charming ways are being found of utilizing them in other parts of the country or suburban estate. Very effective and massive gateposts are being made from them, and the list of possibilities includes summer houses, well houses, sun dials and similar accessories to an extent which is not as yet really appreciated by the owners of the suburban and country homes.

Cobblestone floors and cobblestone roofs are a distinctly Pennsylvania fad. It is not unusual now to find a summer house, or a tiny lake house, with a curious and indestructible roof, formed of little smooth cobblestones about the size of hen's eggs, laid in cement. The same effect is carried out in the floors of summer houses or in porch extensions, where tiny cobbles are imbedded in cement and form a more novel and picturesque feature than the present craze for floors of quaint tiles.

* * *

A House of Vanishing Rooms

A COZY dwelling, remarkable in many respects, and occupied by the builder and his family, consisting of wife and child, stands upon a large tree-shaded plot in Evanston, one of Chicago's most attractive suburbs. At the outset it may be important to state that the house is of stucco, 25 x 26 feet in plan, and cost $1,600 to build, and contains, by an ingenious arrangement, five rooms and a bath.

Exactly in the middle of the ground floor is a base-burner stove, which, upon a supply of four tons of coal, warms the entire house all winter. Over the main floor is a large attic, now used for storage; but two rooms can be finished off there if the downstairs supply proves inadequate.

There is a curious closet between the bathroom and the sitting-room. One-half is a clothes closet, the other a stairway leading to the attic. When shut up these stairs are a tier of boxes serving as clothes hamper, hat boxes, and so on. Pull the lower ones forward and they form a first-rate flight of steps.

Under this closet a door leads to a fair-sized compartment built below the floor—there is no cellar—and gives additional storage room.

The roomy bookcase, if approached from the rear—that is, via the clothes closet—is a linen chest. There is an automatic gas heater in the attic which supplies hot water to kitchen and bathroom.

The visitor staying to dinner wonders where the dining-room is, and whether he is expected to eat in the kitchen. His youthful hostess has disappeared some time since, and he hears sounds in the kitchen that tell him a meal is in process of preparation.

The kitchen is attractive enough for any one to mistake it for a dining-room, but when the critical moment arrives the host presses a button in the hospitable mantelpiece of the living-room, the burlapped wall beneath the mantel slowly rises and disappears, and the dining table, in all its splendor of china and glass and snowy napery, appears through the open-

ing, and when well on the living-room side the partition silently resumes its wonted place again; then chairs are drawn up, and you sit down to enjoy the repast.

At the end of the meal the table is gently pushed back into the other room, the way it came, awaiting the pleasure and leisure of the mistress of the house to clear up.

Perhaps the greatest marvel is when the guest room appears out of an empty wall. A large, roomy couch is rolled over to the windows, and the panel behind it adjoining the bookcase, by the touch of a button, again swings out into the room. It may be swung out at right angles to make a larger room, but is usually left at a three-quarter angle, turning in slightly, and there you behold the guest chamber!

It is a pretty room, with its fresh muslin curtains at the window, snowy counterpane on the bed, low, comfortable chair, and high, built-in dresser, which is in weathered oak to match the rest of the furnishings. When this panel is closed, the space is only large enough to hold the bed, chair and dresser (which is built into the panel), but when opened out it gives a guest room of very fair dimensions, and a screen placed across the 3-foot opening made by the folding out of the wall allows plenty of privacy. In the morning the wall is pushed back into place and the living-room resumes its normal size again.

* * *

Some Causes of Failure

THE fact that a contractor fails to make a profit on a piece of work is not prima facie evidence that his estimate was inherently too low, says "The Contractor." It merely means that it was too low for the methods employed. There are some men who would lose money on a job at almost any figure, seemingly because, like the bark and bite of the dog, "it is their nature to." They have not the vision which sees the end of the work from the beginning, and therefore they are constantly in hot water.

A practical example was furnished on this point on a forty-mile piece of railroad construction in Pennsylvania. All of the work was let to one contractor, who sub-let as much as possible in five- and ten-mile sections. When the work was nearing completion most of these "subs" had to be kept under surveillance to prevent them from pulling out from a losing proposition.

One day the general contractor walked over the work and pointed out to the various sub-contractors where they had failed. In one instance too much had been invested in building a camp of boards, where tents would have been equally efficient, and far cheaper; besides the location chosen was very poor. Another had used pitcher pumps, where a power pump would have saved time and labor, and still another insisted on napping stones by hand where a crusher would have been advisable. A striking example was that of one of them who finished the grading very roughly, leaving it inaccurate to the stake readings and badly rutted by carts. All profits were sacrificed when the engineer required neater work, and he by no means insisted on "sandpaper" finish, either. Another used carts and lost money during the wet season, where cars would have saved the situation. The height of folly was reached by the man who had a small steam shovel on the job, but insisted on mucking the top layer of a cut. When he was ready to use his shovel he found himself in rock, and as the work was let unclassified, it was easy to figure where his profits had gone.

Design for Grammar School Building, San Francisco

Cement and Cement Tests*

By WM. B. GESTER, C. E.

INTERESTING as might be a fairly full discussion of this subject—"Cement and Cement Tests"—it is impossible with the time at our disposal to do more than touch upon a phase or two that have seemed to me to be of especial importance, largely because they have been strangely, and I believe unwisely, neglected.

We all know so well of the very great increase during recent years in the use of Portland cement concrete, that figures to prove the importance of the matter are unnecessary. We all recognize the fact that this rapid growth, so rapid that it has been termed a "craze," has been greater than the growth of accurate general knowledge even among engineers and construction superintendents regarding the materials employed in its use. As regards the bonding ingredient itself, the Portland cement, we know there are mysteries still unsolved by the experts who are making it a special study. There are some things regarding cement, however, that have been well demonstrated, and which might advantageously receive greater attention.

The question of "aggregates," too, is a very important one. The matter of their size, proportion and physical qualities is one well worthy discussion by itself—quite as important as that of the cement—and yet one which for lack of time we shall not be able to touch upon except incidentally.

The cement—and we will confine ourselves to the consideration of Portland cement only, since it is infinitely the most important of the cements manufactured, and because of economic conditions the only one available for use on the Pacific coast—is an artificially compounded material which mixed with water forming a plastic or semi-fluid mass, undergoes some wonderful and rather mysterious chemical changes, gradually changing into stone. In concrete work it forms the matrix or bond which holds together the particles of sand, gravel or stone, making the artificial conglomerate.

Unless this matrix is sufficiently strong, and has the absolutely necessary element of durability, the careful design, the good quality of aggregate, the best of workmanship in construction, all will avail nothing and the concrete will be poor in quality, possibly dangerous, worse than worthless.

As manufactured and placed upon the market, cements vary greatly in character and in quality. They vary to an infinitely greater extent than the ordinary consumer knows. Not only do the various brands differ from one another, but the best of brands will vary in chemical composition and in physical characteristics from time to time.

To be at all available for ordinary use these variations must be confined within certain limits. After years of experiment and discussion these limits have been very closely fixed, and are set forth in the Standard Specifications of the American Society for Testing Materials.

These specifications provide tests for Pulverization, Soundness, i. e., permanence of volume; Setting Time, i. e., length of time required to pass from a state of plasticity to one of hardness; tests of Strength at various periods after mixing, etc.

Thousands of experiments have shown that a Portland cement fulfilling the requirements of the Standard Specifications, will be composed chemically within certain limits, as follows:

Lime	From 58% to 67%.
Silica	From 19% to 25%.

*Paper read before the League of California Municipalities, San Diego, November 16, 1910.

Alumina	From 5% to 10%.
Iron	From 2% to 5%.
Magnesia	Less than 4%.
Alkalis	Less than ¾%.
Sulphuric acid	Less than 1¾%.

Whenever these limits are passed in either direction, trouble is apt to ensue.

A deficiency in lime produces a weak cement.

An excess of lime produces an unsound cement.

A deficiency of oxides (aluminum and iron), or an excess of silica, makes necessary the application of a greater degree of heat than the most refractory of kiln linings can stand to produce the cement clinker.

A deficiency of silica or an excess of the oxides of aluminum and iron results in a cement that is apt to be weak and not permanent, the aluminates being the first of the chemical compounds in Portland cement to undergo decomposition.

The result of an excess of magnesia has not been definitely determined, but enough is known to make it certain that a weakness ensues, and that the limit of 4%, as provided in the American Specifications, is a wise one.

An excess of alkalis makes a cement too rapid in set for practical use.

The sulphuric anhydride (SO_3) in Portland cement comes from the addition to the clinker before grinding of a proportion of lime sulphate, the sulphate in the form of gypsum generally speaking, being added for the purpose of so retarding the setting of the cement that the users may be given sufficient time to place the concrete. A deficiency of sulphuric acid generally results in quick set. An excess also results in an acceleration of set, for an entirely different chemical reason, however, and a subsequent weakness of the concrete.

The raw materials of which Portland cements are made vary, as do all natural deposits. One can never be certain that two carloads of limestone coming out of the quarry will contain just the same proportion of lime, nor of silica, nor alumina nor iron. No two consecutive carloads of clay from the same pit can be relied upon to contain the same proportions of silica nor alumina nor iron. They may do so approximately; but frequently they vary greatly.

The proper proportions in the raw mix or meal of all these necessary constituents of the cement are kept only by continuous sampling and chemical analysis of the most careful kind.

Variations in character of the raw material also affect the physical preparation for burning. An unexpected mass of cherty limestone in the quarry, or an unusual proportion of hard sand in a spot in the clay pit may result in lack of sufficiently fine pulverization of the raw meal, with the deplorable result of uncombined lime in the clinker, and an unsound cement.

In a well managed plant all these things are of course continually and carefully watched, and it is absolutely necessary that they should be, or the product of the plant would be unreliable and worthless.

In spite of the utmost care and caution slips will happen, and no slip can occur without deleterious effect upon the cement.

It is further true that Portland cement, when well made, is not an absolutely stable chemical compound. Changes take place for which the cement chemist has given us no perfectly adequate and satisfactory explanation. One peculiar phenomenon is that of the change of set. An apparently normal cement will acquire a flash set, and be utterly unfit for use, and it may without further treatment than just keeping, return in time to

a normal set again. This is not a very frequent happening, and yet no careful engineer can afford not to provide against it.

No men understand these conditions so well as the makers of cement themselves, and none are more desirous that every precaution shall be taken by engineers and superintendents to the end that no cement shall be mixed into concrete which is unfit in any particular for the purpose for which it is intended. There is no cement manufacturing concern of reputable character but is perfectly willing, and indeed wishful, that all its product shall be properly tested before being put into work. None appreciate more fully than the makers the fact that a faulty piece of concrete work traceable to a brand of cement, produces conditions very difficult and tedious and expensive to recover from. And it may be taken for granted that the more careful and painstaking and jealous of good reputation a cement maker may be, the more willing and desirous he is to have his product subjected to the prescribed tests.

It is infinitely better and infinitely more economical to replace a lot of cement, discovered before use to be defective, than it is to test and then tear out completed work that has proven weak and dangerous.

Quite a number of cement manufacturing companies have published as advertisements, and have distributed among their customers, pamphlets containing the Standard Specifications for Portland Cement of the American Society for Testing Materials.

I have purposely drawn attention to the many possible causes of defects in Portland cement, not by any means to deprecate its use, for its value as a building material can not be over-estimated, but merely to inculcate caution, to illustrate the necessity of properly testing cement before using it, a necessity that is recognized so thoroughly by experts that the first paragraph of the General Conditions of the Specifications of the American Society of Civil Engineers covering Portland cement reads as follows:

"1. All cement shall be inspected."

Then follow other "General Conditions" providing for the time, place and facilities to be provided for the sampling and testing comprising the inspection. The specifications recommend that the acceptance or rejection of cement be based upon tests made by an experienced person having the proper means for making the tests.

The tests as specified require special apparatus, but this is true also of the tests required for iron and steel and the rest of the building materials.

Only the large municipalities and corporations of the country can afford to install the testing apparatus required, and this has rendered necessary the establishment at various points of commercial testing laboratories which do for the engineers and architects and construction superintendents what, for lack of facilities and because of economic conditions, they can not do for themselves, and yet which they recognize to be indispensable in first-class modern construction, the determination of the integrity of the materials employed.

No idea can be more fallacious than the one that the quality of a cement can be sufficiently determined by any other means than the specified tests. A mixture of finely pulverized sand or stone and a little lime will deceive all the senses of touch, sight, taste and smell. We are able to judge quite sufficiently of the character of a piece of building timber by its appearance. In a measure this is true of building stone. To an infinitely less degrees this is true of iron and steel. To almost no degree is it true of Portland cement.

Besides this question of determining the quality of the cement you purpose using, there is one other point that it has occurred to me to bring to your consideration, and that is the advisability when testing the cement with standard sand, thus to get at its relative value for strength, to also test the strength of both the sand and the cement you purpose using to get at the actual strength of the mortar bond in the concrete as you will make it. The sands procurable for concrete work vary so greatly in cleanliness, hardness, size and graduation of the particles composing them as to make the proposed very inexpensive tests very desirable.

By long odds the most complete and satisfactory tests of concrete materials are compression tests of blocks of concrete made of all the materials which it is intended to use.

As these are not always readily procurable, however, the proposed tensile tests of briquettes made of the sand and cement which are to be employed, will serve the purpose very well, giving fairly reliable indications of the strength of the mortar bond.

* * *

Scarcity of Genuine White Oak Timber

IT WILL surprise most persons who know something about oak to be told that the so-called white oak timber of our markets is often a mixture not only of various species of the white oak group, but also of other species, such as the red oak. This generally unknown fact is reported by the United States Department of Agriculture, which, as a part of its forestry work, is frequently called upon to pass judgment upon the identity of market woods in dispute.

Foresters divide all the oaks into two distinct groups—the white oak group and the black oak group. One way of distinguishing the two is by the fact that the black oaks require two years to mature their acorns, while the white oaks take but one. The woods of the two groups of oaks are also structurally different. The true white oak, known to botanists as quercus alba, is merely one of the species which make up the white oak group. Red oak, on the other hand, belongs to the black oak group. Red oak has a number of other common names, among them mountain oak, black oak, and Spanish oak.

There is so much confusion in the ordinary use of names of the oaks that it is almost impossible to keep them straight without resorting to the scientific names, but the marketing of wood of the black oak group as white oak is hardly fair to the consumer. Red oak, for instance, is now much more abundant than white oak, grows faster, and is generally regarded as inferior. The two species often grow together and occupy the same general region.

In the early days of its abundance, market white oak was derived almost entirely, it is safe to say, from quercus alba, the true white oak. This species combines approximately the utmost strength and toughness of any of the timber oaks, excepting possibly the southern live oak, which in the colonial days was so highly prized for shipbuilding that it was protected by special laws. The immense inroads made upon the then apparently inexhaustible white oak forests, which stretched from the Atlantic seaboard to about Missouri, gradually so reduced the supply that the use of other species became inevitable.

At the present time it is almost impossible to obtain a consignment of white oak that does not contain pieces of some other species. Of the white oak group those most used, in addition to the true white oak, are the bur oak, chestnut oak, chinquapin oak, post oak, swamp white oak, cow oak, and overcup oak; of the black oak group, Texas red oak, red oak, and spotted or water oak.

Cooling Buildings by a New Method of Construction

APPROACHING the problem of the cooling of buildings through a departure in the ordinary methods of construction is the way a Los Angeles man has attempted to secure the desired results. His scheme recently has been patented and has been tried out with success at Rialto, Cal., where an interior temperature has been obtained running as high as 32 degrees F. below that of the outside air when the outside thermometer has registered 110 degrees F.

The method of construction is known as the Fellowes system and is the invention of Thomas Fellowes, of Los Angeles. It is described as a cooling system for packing houses, but already has been adapted for school houses and, it is claimed, may be used in practically any type of construction work.

Briefly, the system consists of a series of wooden strips fastened horizontally, but dipping downward to the outside, placed in the lower half of windows. On the inside, covering the opening and pressing against the strips, is a thick but loosely woven cloth. A line of water piping extends across each window directly above the strips. Through a series of perforations in the piping thin streams of water are allowed to run down over the cloth, saturating the fabric. The air from the outside, in passing between the strips and through the cloth into the building, is cooled by passing through the wet fabric. It then circulates through the building and is drawn out through partial vacuum exhaust vents extending through the roof. To further exclude the heat, the building is constructed of hollow tile blocks and double windows are used.

The roof is covered with insulating material, the outside layer being of tar with a special white coating.

The amount of water necessary for a one-story and basement building occupying a space 24 x 66 feet has been found to be about 500 gallons daily. This is drawn from a tank designed for the purpose. The water flows by gravity through the pipes and is returned to the tank by means of a pump.

The accompanying illustrations show the scheme of construction in detail as applied in the case of a packing house for citrus and other fruits, especially lemons. In the arid regions and valleys of the interior of California the lack of moisture in the air wilts the lemons in storage on account of the liberation of the citric acid they contain and in humid localities the hygroscopic nature of the lemons absorbs the moisture, causing them to rot.

The air deflecting vanes, it will be noted, are substantially louver windows and the fabric used in the upper sills may be burlap, canvas or similar material.

The water as it escapes from the perforations in the pipes falls to a trough which extends longitudinally the length of the building walls. Thence it passes to the fabric strips.

The excess water which is not absorbed by the fabric or which is not vaporized by the inflowing currents of air, together with any other excess water, flows into a drain trough built on the outside of the walls directly below the windows.

In the typical construction shown, when the temperature of Compartment A (Fig. 1) has been reduced to the degree which the citrus fruit requires for its preservation the further lowering of the temperature is prevented by shutters secured to the tops of the window casing which, when shut, entirely exclude the air.

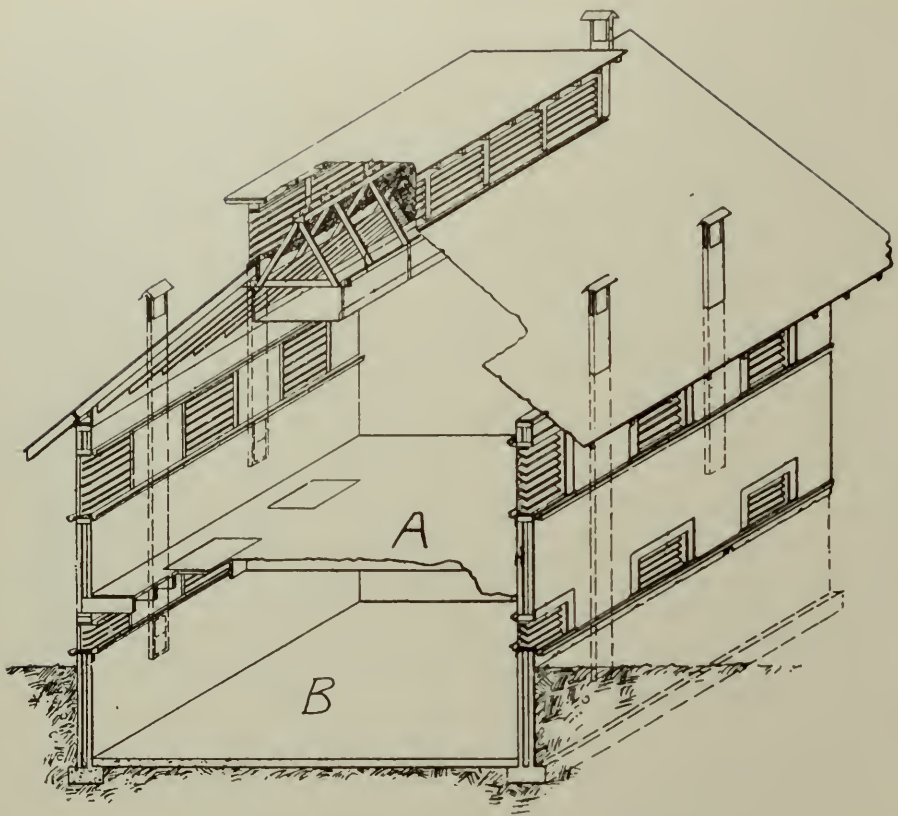


Fig. 1. Typical Construction of Building to Secure Cooling Effects

On the other hand, when it is desired to remove from Compartment A (Fig. 1) any vapid or stagnant air, vent pipes are provided in the hollow walls, the openings of which are controlled from the inside by means of slides or doors. The vitiated air thus passes out of the building without affecting the cooling process.

The method of operation as thus described is designed only to reduce the temperature of the incoming air, as the amount of humidity thus supplied is not sufficient.

Fig. 3 shows the additional arrangements found necessary to procure the desired amount of humidity. It will be noted that the roof is capped by a dormer louver inside of which is a V-shaped frame fitted with strips of burlap, canvas or similar material. Directly above the frame is a water supply pipe provided with perforations similar to those in the other water pipes. The water flowing through the perforations, after saturating the strips, drops to a pan connected to a drain pipe. The dormer louvers are also equipped with shutters for the regulation of the humidity by cutting off the inflowing air.

When there is a lack of humidity in the main compartment, the operation of the system is as follows: The shutters of the dormer louvers are opened and the shutters of the wall louvers are closed. The air induced through the saturated burlap in the dormer louvers carries with it a certain amount of moisture which condenses and descends as a precipitate within

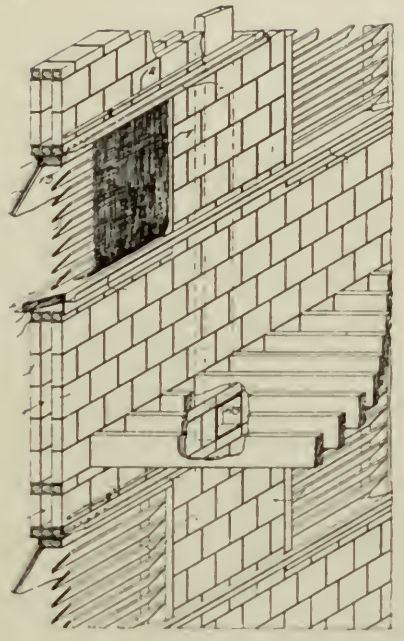


Fig. 2. Detail of Interior of Building

the Compartment A (Fig. 1). When a sufficient amount of humidity has been obtained, the dormer louver shutters are closed and the shutters for the wall louvers are opened to effect the necessary cooling of the chamber. This humidity arrangement also serves to furnish the proper quantity of oxygen for the workman.

The main compartment is separated from the basement compartment by a tight floor. The basement, generally used for storing, is therefore equipped with wall louvers, etc., similar to those of the main floor. To extract vitiated or stale air from the basement compartment separate vent flues are carried to the roof (Fig. 1) and by being independent of each other and placed at stated intervals in the basement walls of the basement, it is possible to create separate air currents in separate portions of the basement. The tops of the vent pipes, in all cases, are covered with hoods which have a coating to refract the sun's rays.

To supply humidity to the basement compartment the shutters of the dormer louver (Fig. 3) are opened, causing a precipitation of moisture within the main compartment. The descending currents of moisture-laden air are then caused to pass through trap doors (Fig. 3) built for this purpose in the floor of the main compartment. When a sufficient amount of humidified air, as indicated by a hygrometer, has descended into the basement, the trap doors are closed. Further precipitation of moisture in the main compartment is prevented by closing the dormer louver shutters.

The wall vents, it is claimed, leading from the main and basement compartments, aside from relieving the compartments of impure or stale air, may also be used to dry the air when the amount of humidity is greater than that required for the specified purposes.

In the development of the invention as described, Mr. Fellowes states that a special type of vacuum vent has been adopted which is not shown

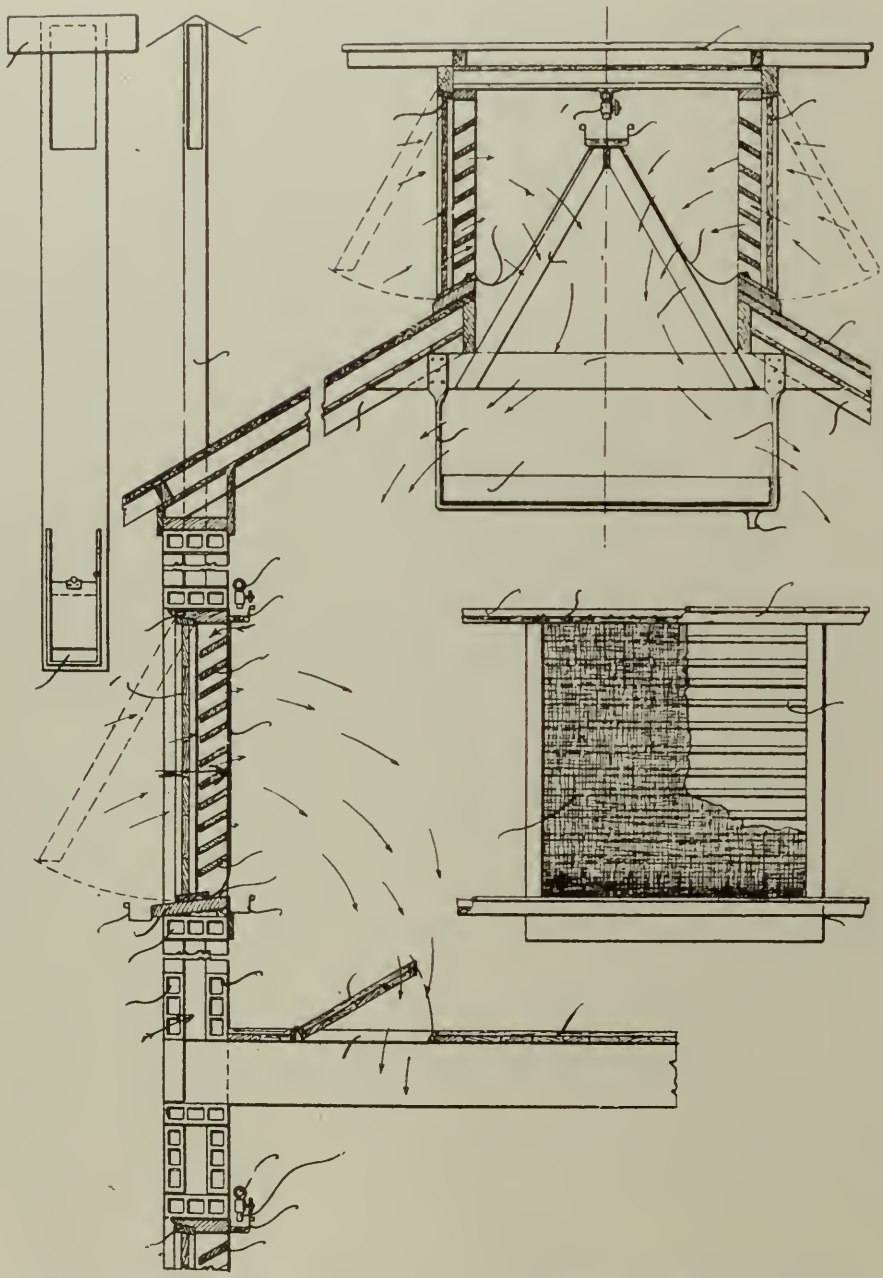


Fig. 3. Arrangement of Screens, etc., to Secure Desired Humidity, Showing Course of Air

in the illustrations. In one installation of the system already made, the method of construction has been adapted for a meat market and, it is claimed, the system may easily be modified for creameries, hotels, churches, school houses, residences and factories.

* * *

Uncle Sam a Careful Builder

THE United States government has 110 buildings under construction, and each structure is given personal supervision by a representative of the Treasury department. This shows how carefully Uncle Sam watches all of his work, taking good care that the architect's specifications are followed, and that the builder lives up to his contract.

The extent to which government supervision reaches is best understood when it is realized that at the present time Congress has authorized 500 new buildings. The annual expenditure of the Treasury department on federal buildings alone exceeds $12,000,000.

In this connection it is interesting to note the manner in which buildings are secured after the need for one is felt. The first move of course begins with the introduction of a bill in Congress by either a Senator or a Representative. The bill, if considered plausible, is referred to the Building and Grounds committee of the House in which it was introduced. This committee makes no appropriation for buildings, but authorizes their erection and fixes the cost. The Treasury department is requested to furnish, usually, figures of the probable cost to the committee.

When a report has been made by the Treasury department to the committee, the committee in turn prepares a bill and reports it to their branch in Congress, where it is either passed or turned down in turn by both houses.

If the bill is passed, and approved by both Houses, the matter again goes to the Treasury department, which this time makes an estimate as to the cost of carrying on such work in connection with purchasing the site and erecting the building. This estimate is reported to the Committee on Appropriations and is incorporated in one of the large appropriation bills. When the appropriation measure is passed the money becomes available for expenditure and the actual work of starting construction is reached.

Here again the Treasury department takes up the work, advertises for a site and when offers have been made an agent is sent out to look over the sites and report on the best ones. When the Secretary of the Treasury approves of a suitable one, title is secured and then the ground is paid for.

Only when these preliminaries have been concluded is work on the plans for the proposed building begun. Two sets of plans are made. The first, the ones upon which the estimates are made, are submitted to the Cabinet board, composed of the Secretary of the Treasury and the heads of such departments as will have employes in the new building. The second set goes to the contractors for competitive estimates. The contract for construction goes to the lowest and best bid.

From the moment the contract is let, work is expected to progress, and the ever-watchful eye of the Treasury department is on both contractors and the building, seeing that only satisfactory work is done.

* * *

Quite Different

Mrs. Subbubs (who has hired a man to plant shade trees)—Digging out the holes, I see, Mr. Lannigan.

Lannigan—No, mum. Oi'm diggin' out the dirt and lavin' the holes.

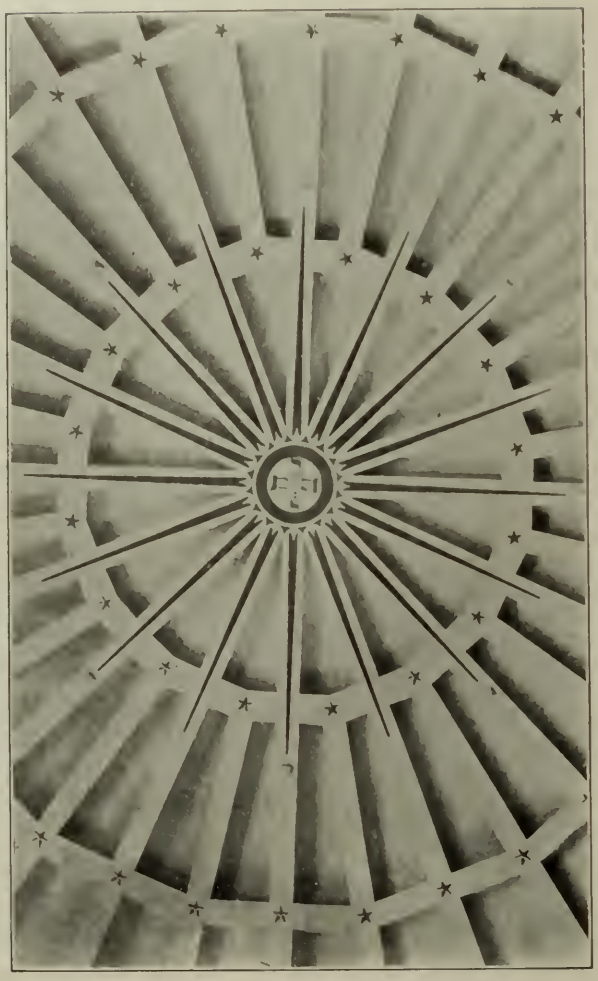


Figure 3

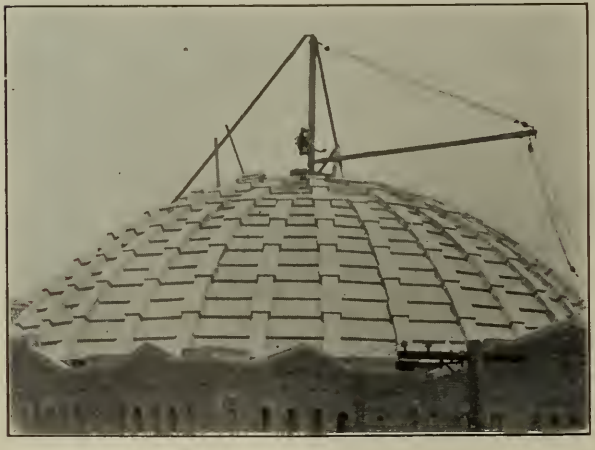


Figure 2

Figure 1

Unit Concrete Plates in Church Dome Construction

By HOWARD RHODE.*

BY THE use of new ideas in concrete construction, the development of the uses of cement is making rapid strides, and only by the consideration of the results of these new ideas can the most satisfactory methods be arrived at.

A very notable example, and one which merits the attention of those interested in reinforced construction, is the dome of the Linden Baptist Church, located at Ninth and Linden streets, Camden, N. J., which was designed by Messrs. Arthur Truscott and Arnold H. Moses, associate architects, 136 South Fourth street, Philadelphia, and executed by Turner & Stewart, contractors, of Camden, N. J.

In the development of their ideas, the first problem was the selection of the materials to be used, and, in this respect, the architects gave as their reasons for selecting trap rock grit, that it was the strongest procurable aggregate and was, as a rule, cleaner grit than that of other stone. Coarse white bar sand for color and strength was selected. The result of this selection is best appreciated by an inspection of the finished dome, which, in its completion, is a beautiful example of what closely imitates a marble structure.

The concrete plates of which this dome is constructed are (according to their location), from 6 ft. to 6 ft. 6 in. long, averaging 2 ft. 6 in. wide and 1½ in. thick. They were made of concrete, proportioned 1 part of cement, 2 parts of white, clean, coarse sand, and 2½ parts of ¼-in. trap grit, thoroughly mixed and placed in the forms very wet. The forms consisted of faced hemlock made roughly and so constructed that upon the removal

*Philadelphia, Pa. Courtesy of Concrete Engineering.

of the sides and the stripping of the concrete, the forms might be put together and used over again. In this form was laid a sheet of 26 gauge diamond mesh, expanded metal, placed with the long axis parallel to the long side of the plate, the sheet being turned up and down in the lips which form the interlocking, overlapping system. After the concrete had been placed, care being taken to thoroughly imbed the reinforcement, the top was trowelled smooth with a dryer of one part of sand and one part of cement. These plates were allowed to stand from nine to ten days in a damp cellar where they dried slowly and were frequently sprinkled so as to give the surface a hard and white appearance.

From the first floor to the beam extending around and under the base of the dome are 16 concrete columns of monolithic construction, 32 ft. high x 2 ft. 6 in. diameter, the crown of the dome being 27 ft. above the top of these columns, and the diameter at its base 72 ft. 6 in. Wooden rafters, running from the top of each column, and resting on cast iron shoes and extending to an angle-iron circle at the crown, were constructed of 12 layers of 1 x 10 yellow pine boards. These were bent and bolted to their proper diameter on the ground and each raised into position in one piece. By the aid of tie bolts, these rafters were held in position and were covered with two layers of 1-in. boards, with broken joints, on top of which were nailed 2 x 3 cleats, same being for the purpose of supporting the ends of the concrete plates. This entire surface was covered with roofing felt, three-ply, carefully jointed and cemented to flashings at the base, forming an absolutely impervious roof.

The 15 courses of concrete slabs were then laid in position, each overlapping the other on both the longitudinal and transverse joints, after which the longitudinal joints were covered with concrete tile, 12 in. x 6 ft., made of a similar construction to the flat plates. Bringing this construction as near the top as was considered practical, a special 10-ft. diameter crown plate was cast and placed, which completed the dome construction from the exterior.

The soffit side was covered with patent plaster board, deep panels having first been formed of rough lumber, and the entire interior surface being decorated in white and gold. Fig. 1 gives a general idea of the architectural effect of this structure from the street, Fig. 2 being a detailed view from a closer point, and Fig. 3 shows the soffit. This last-mentioned photograph was taken by the writer laying on his back and with the camera pointed directly up.

* * *

The Decorative Value of Indian Pottery

WHILE Americans ransack the old world for the artistic adornment of their homes, there is at their very back door, so to speak, practically unknown and neglected, a native art of remarkable possibilities for interior decorations—the art-work of the American Indian, especially as developed along the lines of pottery making, basketry and blanket weaving.

So far as the average American knows of this work at all, he thinks of it as something suitable mainly for curio collections or museums, or for some odd corner in a den or studio. It adapts itself in a remarkable way to the finest and most dignified types of furniture—the quiet and harmonious coloring being in perfect concord with the soft browns of solid mahogany or rosewood, with copper, brass, and other adornment of the house beautiful. Few ornaments are so adaptable.

Stucco

By ALBERT M. MOYER, Assoc. Amer. Soc C. E.

THE history of stuccoes does not furnish sufficient information and data to be of practical value in the manufacture of the present day Portland cement stuccoes. There are records standing 350 years B. C. of stuccoes made of vastly different material than are of economical use at the present time, and we find that such stuccoes were almost invariably used in the warm climates where the action of frost would not tend to disintegrate the rather poor material which was then available.

There is every reason to believe that originally these stuccoes were intended to cover up and protect inferior building stone and sunburned straw brick. The archaeology of stucco would tend to show that from an artistic standpoint this method of decoration was a development of the wattled buildings, which were plastered with clay and different muds hardened by being baked in the heat of the sun. Therefore, in this instance, the use of clay plaster over wattled houses was to protect an inferior building material.

Today stucco is used for similar purpose, that of protection and pleasing surfaces. It would, therefore, seem advisable to recommend a material which would best serve the purpose of protection and artistic merit. Stucco or plaster should never be used as an imitation of other building material.

"To cover brick with plaster and this plaster with fresco is perfectly legitimate, the plaster is gesso grounds on panels or canvas, but to cover brick with cement and to divide this cement into joints that it may look like stone, is to tell a falsehood, and is just as contemptible a procedure as the other is noble."

To carry out these ideas we desire to recommend only Portland cement stucco for exteriors, as this is the only hydraulic material which will stand the action of the elements.

From the artistic side we would also recommend such surface finish for stucco as will cause both natural color and pleasing texture. It would be well, therefore, to expose to view the aggregates used and avoid as far as possible exposing the bonding material, Portland cement.

There is no artistic reason for allowing only the bonding material to be displayed to the eye. On very large jobs the surface can be cleaned off by means of a sand blast, and on smaller jobs the surface may be cleaned, exposing each grain of sand, by means of muriatic acid in dilute solution, one part commercial muriatic acid, four to five parts clear water.

Where white aggregates are used the surface may be cleaned off with a solution of sulphuric acid, one part acid, four to five parts clear water. The sulphuric acid leaves a white deposit and therefore should not be used excepting where the aggregates are white.

Another method is to scrub the surface while yet green, say within twenty-four hours, with a house scrubbing brush and clear water. This is more difficult than the others for the reason that if the stucco is allowed to remain too long before scrubbing, it will be too hard to remove the coat of neat cement from the outside of each particle of sand or other aggregates; and if scrubbed when it is too soft the surface may be damaged and difficult to repair.

If the character of the available aggregates will not present a pleasing surface when exposed, the following surface treatment may be used:

While the last coat is still thoroughly damp, apply a Portland cement paint composed of one part Portland cement, twelve per cent of the volume of the cement of well hydrated lime, pulverized form, and one part of the volume of the cement of fine white sand. Mix with water to the consistency of cream or the ordinary cold water paint. Stir constantly and apply by using a whisk broom, throwing the paint on with some force.

Keep this finish surface damp for at least six days, or longer if economy will permit. Do not allow it to dry out in any one place during the week. If necessary protect by hanging tarpaulins and using a fine spray of water, playing on several times during the day by means of a hose. This will give a pleasing light gray color of excellent texture.

Stucco may be applied to various building materials. There is hardly any reason at the present time for stuccoing stone buildings, the procedure at best is difficult and hardly to be recommended. Our building stone is usually an excellent material and therefore does not require either protection or covering to produce pleasant effects.

New brick may be covered with stucco very successfully. The joints should be first raked out half an inch. The brick must be saturated with water. It is always best to start stuccoing at the top of the wall and work down between the pilasters or corners, finishing a whole strip or whole side wall from top to bottom in one day. Thus no streaks or cracks are formed where one day's work ends and another begins. By this method the wall can be kept wet ahead of the work by means of a hose.

The second coat should be put on as soon as the first coat has stiffened sufficiently to hold in place and stand the pressure of the trowel. This second coat should be well scratched and the finish coat applied while the second coat is damp. The finish coat should then be kept wet, protected from the rays of the sun and as far as possible from drying out. This can be done by hanging wet clothes over same. This rule of keeping each coat moist until the other coat is applied and protecting after applying the finish coat, must be observed in all forms of Portland cement stucco.

If the stucco is to be applied to metal lath or wire cloth the metal should be plastered on two sides so that it is entirely encased in mortar in order to avoid rusting. If this is impracticable then the metal lath or wire cloth should be dipped in a paint made of equal parts of near Portland cement and water. Immediately after dipping, the metal lath or wire cloth should be tacked onto a frame in the position it is intended to occupy. As soon as the near Portland cement has hardened on the metal apply the first coat of stucco. Hair should be added to the mortar to be applied on wire mesh or expanded metal. One bag of cement should be used to one pound of hair.

If plaster boards are used they should be nailed on the frame work of the building, leaving at least a quarter of an inch joint between each plaster board. This joint to be filled in with lime putty, otherwise each plaster board will cause square cracks on the outside of the stucco the size of each board.

A convenient method of waterproofing plaster boards is easily available. The boards may be painted with two coats of any of the reputable bitumen waterproof paints to which plaster adheres. Then about twenty-four hours after the bitumen paint has been applied, and within six days, apply the first coat of stucco.

For stucco on terra cotta blocks great care should be exercised in keeping the blocks thoroughly saturated with water, for if the blocks

are not saturated they will pull the water out of the mortar and it will crack and disintegrate.

Portland cement requires water until it has thoroughly hardened, which ultimate hardening usually takes from fourteen days to a month. It is not always necessary to play the hose on the wall for a month, although it would be advisable. The dews at night, the dampness in the atmosphere and the rain will furnish the necessary moisture provided the material on which the mortar has been plastered has not too great an affinity for water.

In order to prevent the porous hollow terra cotta tile from sucking the moisture from the stucco and also to furnish waterproofing and an additional bond other than that which would be given by the key, it is good practice to paint the surface of the dry terra cotta blocks after having been erected in the wall with two coats of bituminous paint, equal to such paints as dehydratine, Minwax, R. I. W. or X-Hydro-Plastic. It is important that the first coat of stucco is placed over this paint after twenty-four hours and within six days.

Proportions for a good stucco should be one part Portland cement, 2½ parts coarse clean sand. (If coarse clean sand is not available use only two parts of sand.) Add ten to fifteen per cent of well hydrated lime, dry pulverized, of the volume of the cement.

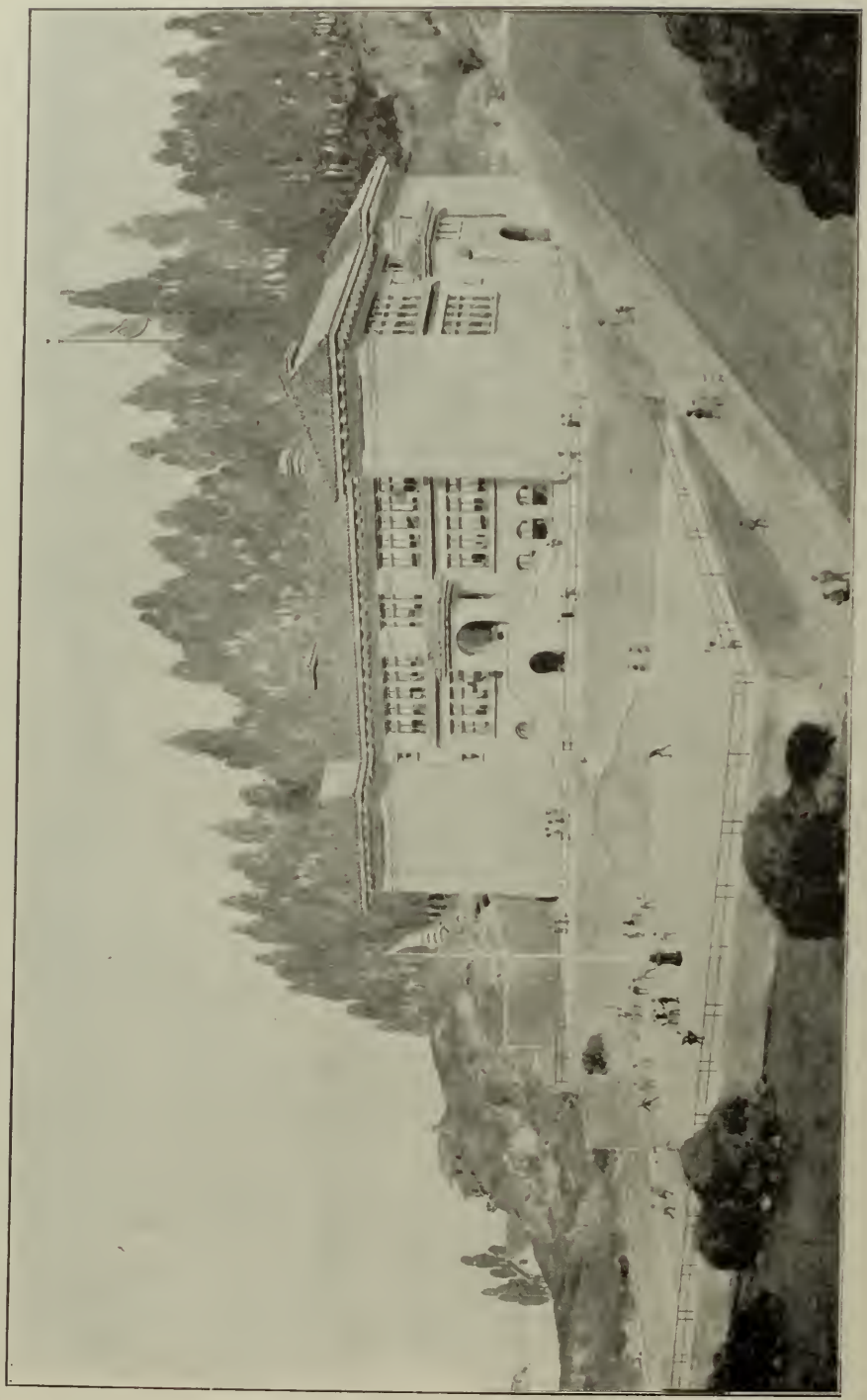
If it is the desire of the owner or architect to use the exposed aggregate method interesting natural colors can be obtained by using the following materials instead of sand, the same proportions: green, red, buff, black or white marble screenings all passing a No. 8 screen and all collected on a No. 40 screen. These different colored marbles and different colored sands where obtainable, can be used singly or in a combination. When exposed by scrubbing or the acid treatment, very interesting results are obtained.

In mixing stucco great care should be exercised to obtain the thorough incorporation of cement, sand and the other aggregates. The sand and cement should be mixed together dry until an even color results. This can be done by shoveling and raking while shoveling. Water should then be added, being careful not to add too much water at a time and not to get the resulting mortar too wet so that more sand or cement has to be added. Be very careful to bring the resulting mortar up to the proper consistency for plastering.

It is advisable to add to the mortar from ten to fifteen per cent of the volume of the cement of well hydrated lime. This should be mixed dry with the cement and sand before the water is added. The addition of hydrated lime tends to fatten the mortar, making it more adhesive and impervious.

Another specification which we believe will prove of considerable value is by the addition of mineral oil to wet mortar. After the water is added and thoroughly mixed with the mortar add fifteen per cent of mineral oil and remix. If a light effect is to be produced use white oil, such as oil petrole, manufactured by the Chesebrough Manufacturing Co. When the oil is to be mixed with the mortar it is always advisable to use hydrated lime, as we thus have a larger amount of emulsifying material.

The color obtained by the scrubbing or acid method is limited only to the available sand or marble screenings. The color will be the color of the aggregate. An excellent green can be obtained by adding eight per



One of San Francisco's New School Buildings in the Mission Style

cent of the weight of the cement of Cromium Oxide. This should be mixed dry with the sand, cement and hydrated lime.

Always keep in mind that the surface to which the mortar is to be applied must be thoroughly saturated with water, each coat of stucco must be kept moist and the final coat must remain moist for at least one week, and longer if economy will permit.

Stucco should not be troweled to a smooth surface. The artist painter would never think of smoothing the paint on his canvas by means of a straight edge. Texture and color are necessary if artistic results are to follow. By using the suggestions above outlined, the architect is privileged to select the aggregates from which the stucco is made and has in fact as great play in the planning of the color, tone and texture as has the artist in mixing the paints on his palette.

* * *

Rules for Measuring Concrete and Excavation

A JOINT committee, consisting of architects, engineers and contractors of the city of Chicago, has recently adopted rules for the measurement of excavation and concrete work. The formulated rules cover all the details of this kind of work on building construction, defining specifically how certain classes of work shall be paid for. The adoption of this set of rules, according to our contemporary, the Contractor, of Chicago, is the outgrowth of difficulties in coming to an agreement for compensation, entailing not only disputes and bad feeling between the parties, but litigation as well. It is only natural that a contractor will make claims for extra compensation when his margin of profit is dwindling because he was obliged to go to additional expense in erecting forms for concrete, or sheeting in for excavation, which could not be foreseen when he made his estimate. Under the rules drawn up, provision is made for these contingencies and extra compensation is allowed where excavation becomes difficult, or where forms for concrete are complex, so that they require not only more time, but additional outlay for material.

There can be no doubt that the step taken by this committee is in the right direction, and that much resultant good will be the outcome. More than this, it is worthy of imitation and an extension with modifications to suit, into the general contractors' field. Here it would undoubtedly prove quite a factor in solving some of the problems which arise in reference to proper compensation. Most contractors would not require deep research in the repertory of their work to adduce instances of this kind, where, for instance, the encountering of a certain kind of material made the execution of the work a dead loss at agreed prices, which would not have been accepted had the circumstances been foreseen. It is a fact well known to contractors that in many of these cases the solution has to be sought in the arbitrary decision of the engineer, who would or would not allow additional compensation, according to his interpretation of the contract or specifications. In almost every contract instances of this nature arise, and it would seem that a logical solution would be the establishment of standards to cover these contingencies.

As a step toward standardization alone, this Chicago body has marked an advance. A little study of organization proves that the establishment of standards has been the keynote of success for all enterprises, which would apply in this case. It would furthermore promote good feeling between all parties concerned which in turn would result in better work. Another benefit which would result from this is that the establishment of such rules of measurement in the general contracting field would make a better basis for estimates.

Among the Architects

American Institute of Architects

(ORGANIZED 1857)

Next Convention in San Francisco, in January, 1911

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Architectural Club's Year Book

The 1911 Year Book of the San Francisco Architectural club will be combined with the January number of the Architect and Engineer which will appear earlier in the month than usual, on account of the convention of the American Institute of Architects, which is to be held in San Francisco January 17-19. The best work of the members of the club will be illustrated in this number. Other features will include an exceedingly interesting paper by Architect Arthur B. Benton of Los Angeles on California Mission Architecture. This will be illustrated with Mission style buildings designed by Mr. Benton.

Los Angeles Chapter A. I. A.

The November meeting of the Southern California Chapter of the American Institute of Architects was held at the Hollenbeck Cafe banquet rooms, twenty-seven members being present; A. A. Hubbard, of the Board of Public Works, was a guest. The chapter passed a resolution requesting the board of public works to have Mr. J. J. Backus, head of the building department, sent to San Francisco in January to attend the annual convention of the institute as the special representative of the city. A committee of five was appointed to act with the chapter's regular entertainment committee to raise funds and prepare a program for the entertainment of the architects who will attend the convention as delegates and visitors. The delegates chosen to represent the Southern California chapter are: Messrs Frank D. Hudson, A. F. Rosenheim, John P. Krempel, Fernand Parmentier; alternates: Messrs. Octavius Morgan, R. B. Young, John C. Austin, Tilden S. Norton.

Los Angeles Architectural Club

The monthly meeting of the Los Angeles Architectural Club was held November 7 in the club rooms. The board of directors announced the appointment of Mr. Myron Hunt to the presidency to fill the unexpired term caused by the resignation of Mr. Frauenfelder. New members, numbering 43, were announced, making the total 233.

The president announced the personnel of the standing committees as follows:

Library—A. R. Kelly, chairman; H. F. Withey, Ralph Cassity.

Entertainment—Scott Quintin, chairman; Alfred Kuhn, J. Sindorf.

Competition—F. L. Stiff, chairman; E. R. Jeffery.

Music—F. R. Schaefer, chairman; I. J. McCreary, H. A. Whiteley.

House—Otto Janssen, chairman; H. T. Miller, R. C. Wilson.

Classes—J. T. Vawter, chairman; H. F. Hossack, D. C. Allison, F. P. Davis, Elmer Grey.

Publicity—Henry Bean, chairman; A. R. Walker.

Boosting—J. J. Frauenfelder, chairman; the chairman of the various standing committees are members, together with the members of the board of directors, ex-officio.

Active work is well under way for the annual exhibition. It is probable, however, that this year's convention of the Architectural League of the Pacific Coast will be given up on account of the annual convention of the American Institute of Architects, which will convene in San Francisco in January.

Modesto's New Bank Building

Bernard J. Joseph of San Francisco is the architect of a handsome banking structure now under way for the Commercial National Bank at Modesto. The building is a fine example of the Greek Doric style of architecture. The entire exterior will be faced with Raymond white granite, with bronze and plate glass entrance doors. The interior arrangement of the banking space includes a spacious public room, the president, public and private offices and an accounting room. At the rear of this general space are to be situated the coin vaults and the safety deposit vaults. The interior will be handsomely fitted up with marble floor and wainscoating, and marble counters with bronze and plate-glass screens. At the rear of the banking space will be a large directors' room and a waiting room for the accommodation of the bank's clients. The vaults will be equipped in the most modern manner and will be lined with chrome steel lining, door to same will be of bronze and provided with specially geared time locks, and all the workings of the door will be enclosed in plate glass.

City Planning Conference

The city of Los Angeles recently held its first city planning conference. Problems pertaining to the rapid growth of cities were taken up and discussed from various standpoints, and much of value was put into a form that will undoubtedly prove beneficial and of far reaching effect.

One vital topic that attracted much attention was the question of housing the city's poorer population. Cheap sanitary houses are admittedly one of the first problems to be solved if the physical welfare of the poorer classes of the modern city is to be benefited. A model concrete house was on exhibition, designed to carry out this idea of sanitary housing, the estimated cost being $750. It is designed to house comfortably, cleanly and healthfully the average family at a minimum expense. It is to be hoped that a cottage of this fireproof and sanitary character can be worked out on a practical basis, that its success will be demonstrated by actual construction, and that thereby the sore spot of cities, the slum district, will be made a matter only of history.

City Architect No. 5

Alfred I. Coffey has been appointed city architect of San Francisco. Coffey is the fifth person to be named for this office in the past four years. The new incumbent was formerly a member of the architectural firm of Martins & Coffey. Recently Mr. Coffey has practiced the profession alone, with offices in the Humboldt Bank building.

San Diego Building Department

Architect Irving J. Gill of San Diego is interesting himself in a movement to have the various building departments of San Diego merged under one head. Mr. Gill expresses his views as follows:

"I had an interesting talk with J. J. Backus, head of the department of buildings in Los Angeles, where the various departments, excepting the electrical, are combined under one head and are not controlled by politics. When I asked Backus if he would recommend that the electrical department also be included in the department, he said he could only state that it is done with success in most of the larger cities of the United States.

"I would like to bring out that point that the system in Los Angeles is proving highly efficient and most satisfactory. Our plan is to have at the head of the department a civil engineer or certificated architect who understands plans, civic service, public service and office work. Such a man I am quite sure can be secured for $2,000 a year. The adoption of this system would be one of the best things that could happen for the city. It can be operated at much less expense and will give efficient service, saving a lot of time and energy which is now needlessly wasted."

Honor for San Francisco Architects

The architectural firm of Bliss and Faville has been given government recognition, having been invited by the Treasury Department to enter a competition for a building for the Department of Justice, to be erected in Washington at a cost of $1,900,000. Twenty leading firms are to compete and the plans are to be submitted by the first of the year. Following is a complete list of competitors: Cass Gilbert, Trowbridge & Livingston, Don Barber, Foster, Gade & Graham, Howells & Stokes, Percy Griffin, Bannister & Schell, Butler & Rodman, Edward Pierce Casey, Albert Randolph Ross, Lord and Hewlett, C. L. W. Eidlitz, Delano & Aldrich, Palmer & Hornbostel, all of New York city; Bliss & Faville of San Francisco; Parker, Thomas & Rice, Baltimore; Frost & Granger, Chicago; C. H. Blackall, Andrews, Jacques & Rantoul and Wheelwright & Haven of Boston.

New Passenger Depot for Sacramento

The Southern Pacific has appropriated $400,000 with which to erect a new passenger depot in Sacramento next year as soon as the new bridge now under construction across the Sacramento river is completed. In addition to the cost of construction the final price will be run up to $500,000 because of the furniture and elaborate finishings, which will make the structure one of the finest stations on the Coast.

It is the plan of the railroad to build the new depot on what is now a sand lot, from Third to Fifth street opposite I street, thus bringing it several blocks closer to the business center. The approach from the new bridge, which will be finished by next October, will make the present depot impracticable. The approaches from the east to the new depot site will go through the present railroad foundry, which is to be moved.

Two Fine Buildings for Architect Meyer

Architect Frederick H. Meyer of San Francisco has recently been successful in two important competitions. He has been selected to prepare the plans for a splendid Class A building for the German House Association of San Francisco, at an estimated cost of $250,000, and the same architect, associated with Walter Reed of Oakland, has been engaged to make the drawings for a fine seven-story Class A bank and office building for the Security bank of Oakland, the building to cost in the neighborhood of $200,000.

Competition for San Francisco City Hall

The public buildings committee of the San Francisco Board of Supervisors has adopted a resolution that $20,000 be set aside for a fund for competitive plans for a permanent city hall.

It is proposed that the building cost $4,500,000, and that a bond issue of $5,000,000 be made, leaving $500,000 for furnishings.

Supervisor Nelson's idea is that the board of award consist of the mayor, city architect, city engineer and two private architects, to be selected by the supervisors.

Handsome Catholic Church

Architect Charles J. I. Devlin of San Francisco, has prepared plans for a splendid edifice to be erected for St. Ignatius College at the corner of Parker avenue and Fulton street in San Francisco at an estimated cost of $200,000. The building will be 275 by 150 feet and will have a steel frame with brick walls and exterior finish of cement. There will be two towers 240 feet high.

San Francisco Chapter, A. I. A.

San Francisco Chapter of the American Institute of Architects, has elected the following delegates to the coming convention of the institute: William Mooser, G. B. McDougall, Sylvain Schnaittacher, James W. Reid, William Curlett and L. C. Mullgardt.

Messrs Seadler and Hoen, of Sacramento, have been elected to Chapter membership.

Los Angeles Architectural Exhibition

Gratifying progress was reported at the last meeting of the Los Angeles Architectural Club by the various committees in charge of the preparations being made for the second annual architectural exhibition, to be held in January. Sufficient funds have been pledged by the patrons to assure adequate financial support, with the additional money to be provided by patrons in prospect, and the exhibition committee reports a large number of exhibits of high class already arranged for. Present indications are that this winter's exhibition, while it will not be so large as that of last year, will be equally interesting and instructive. The display is to be restricted to the work done this year by Southern California designers.

Mr. Rosenheim explained the position of the Architects' Chapter, stating that there was not universally expressed opposition at the last meeting to holding an exhibition this year. The architects will uniformly give the exhibition both moral and financial support, said Mr. Rosenheim, but expect the club members to take over the burden of work of preparation, in view of the large amount of labor and expense which will be placed upon the Chapter to entertain the delegates to the annual convention of the American Institute of Architects, who will spend two days in Los Angeles following the convention in San Francisco.

Washington Chapter, A. I. A.

The Washington Chapter American Institute of Architects has closed another successful year of activity. At the annual meeting and dinner, held in November at the University Club, Seattle, Mr. Meyers, the retiring president, presented his address reviewing another year's history and laying before the Chapter some of the important projects now before it. The Chapter has been honored in the nomination of two of its members—Chas. H. Bebb and W. R. B. Willcox—for Fellows of the American Institute. Increasing enthusiasm has been shown since the appointment of Mr. Willcox to the Municipal Plans Commission.

The annual election of officers resulted in David J. Myers again receiving the endorsement of his associates for president; Chas. H. Bebb, first vice-president; Frederick H. Heath, Tacoma, second vice-president; W. R. B. Willcox, secretary; Charles H. Alden, treasurer, and Carl F. Gould, Daniel R. Huntington, and W. Marbury Somervell for the council.

Santa Clara College Buildings

Work has been started on the new buildings for Santa Clara college. They are being built in Santa Clara, on the site of the old structures, the management having changed its mind about removing to Mountain View. The buildings are to be of reinforced concrete, and the designing and erection are being done under the direction of D. E. Graham of 704 Mission street, San Francisco, formerly superintendent for Mahoney Bros.

Governor Reappoints Examining Boards

Governor Gillett has reappointed the three members of the State board of examiners in architecture for Northern California, whose terms expired this year. They are William Curlett, Lionel Dean and J. Cather Newsome.

For the Southern California district the governor has named John Krempel, Fred L. Roehrig, Will S. Hebbard, Sumner P. Hunt and Octavius Morgan.

L. T. Bishop

L. T. Bishop, architect, died November 21, at his home, 438 West Fifth street, Pomona. Death occurred suddenly, Mr. Bishop having attended church the day before. After returning home he became ill, and lapsed into unconsciousness, from which he did not recover. He was fifty-one years of age, and had been a resident of Pomona for twenty-three years. The surviving family comprises a widow, two sons and two daughters. Mr. Bishop was identified prominently with the upbuilding of Pomona and vicinity. At the time of his death he was one of the associated architects for the new $75,000 edifice to be built by the First Congregational church, of which he was a member.

PERSONAL

Mayberry & Parker are now in suite 689-91, Pacific Electric building, Los Angeles, having moved from the seventh floor.

Architect Albert Pissis of San Francisco intends to make quite an extensive trip abroad, visiting all the European points of interest.

Architect A. C. Martin has moved his offices from the H. W. Hellman building to suite 430-1-2, Higgins building, Second and Main streets, Los Angeles.

O. W. Morgan, junior member of the architectural firm of Morgan, Walls & Morgan, of Los Angeles, is in the East and before returning will visit New York, Boston, Philadelphia, Pittsburg, Washington, Chicago and St. Louis.

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State Engineer Nat Ellery is being assailed by the administrative forces of certain California institutions in an attempt to discredit his administration. Ellery need have no fears, for so far as we can learn, the work that has been done under his direction has been eminently satisfactory.

State Engineer is All Right.

The State has been saved thousands of dollars by Ellery in the past three or four years. Practically every contract let under his supervision has been taken for less than the appropriation, and the difference represents that much gain to the State. In many instances materials have been bought by Ellery at a lower price than the contractor would have been able to buy them.

The gist of the complaint against the State engineer's department is inefficiency. In view of the fact that efficiency has been Mr. Ellery's motto, it is naturally very aggravating to be condemned for the one thing he has tried to avoid. The charges against the department emanated with the State lunacy commission, which accused Ellery of high-handed and costly business methods. Ellery has made a sweeping denial of the charges and is preparing data for the public which he asserts will prove a sensation. Ellery says:

"They talk about inefficiency. Why, efficiency has been my hobby. They don't want efficiency, these fellows don't. They simply want the appropriations for the various buildings back in their own hands, as it used to be."

During the Ellery administration contractors' extras have been entirely eliminated, and the old plan of handing out work to political favorites is an evil of the past. We have implicit faith in the honesty of Mr. Ellery, and as we said before, he need not be alarmed by such peevish bickerings and whimperings as the lunacy commission's charges would seem to be.

INSTITUTE TO CONVENE IN SAN FRANCISCO IN JANUARY

Next month the American Institute of Architects will hold its forty-fourth annual convention in San Francisco, and several hundred delegates will visit the Coast from all parts of the United States. This is no small honor for the Pacific Coast, and it is hoped the California Chapters, upon whom rest the important task of entertainment, thoroughly appreciate this fact, and will exert themselves in a manner that will impress the visitors favorably. We want them to return home singing the praises of California hospitality. It will be the first trip to the Pacific Coast of many of the delegates, and it is to be hoped it will not be their last. If pleased with their entertainment they will come again—as individuals, if not collectively.

True Versus Spurious Mahogany

Hardwood Record

The Record is in receipt of a letter from a leading foreign cabinet woods house in which the writer says he has read with a good deal of interest the article in this paper of October 25, written by C. D. Mell of the Forest Service, in regard to true and spurious mahogany. He states it is really too bad that something is not done to prevent this wholesale substitution of inferior woods of all kinds which are sold under the name of mahogany, many times to unsuspecting buyers who really believe they are getting the genuine article, and certainly are paying the price of the genuine.

The writer states that Australian mahogany, Philippine mahogany, etc., are sold as mahogany, when in reality these woods are not mahogany at all, their dull reddish color being the only thing in which they resemble the true wood.

The writer states that the pure food law forbids the adulteration of foods and also the misnaming of same, and suggests that a law be enacted to forbid the missnaming of lumber products in order to sell them to people who are deceived.

Another recent letter received by Hardwood Record advocates national legislation covering the grading and inspection of lumber. It may be that such legislation will be the logical result of the vast amount of chicanery that prevails in lumber affairs at the present time. If the misnaming of articles of food or medicines is a logical basis for governmental legislation, it certainly would be in the matter of lumber inspection, measurement, and the fraud incident to the selling of one kind of wood for another.

Demand California Material

The Home Industry League of California has passed the following resolutions demanding that the government show preference for California material in its public buildings:

Whereas, it has come to the knowledge of the Home Industry League of California that discrimination has been practiced against California by the use of structural materials produced outside of this State in the erection of public buildings in California, when the home products are better adapted to such uses, being better, more durable and therefore more economical and desirable; and

Whereas, it is to the interest of California that home industries shall be conserved and strengthened as much as possible; and

Whereas, the only way to secure the best results is through united effort and the best work in this direction is duly appreciated by this organization; therefore, be it

Resolved, that this body indorses emphatically the action of State Mineralogist Lewis E. Aubury, who has protested repeatedly against discrimination against California in the selection and use of structural materials produced outside of California, in the construction of public buildings in California; and, in the interest of home industry, has called the attenton of the federal government, members of congress and the supervising architect of the treasury to such discriminations.

Resolved, that we indorse the position taken by the California Development Board, which has resolved to uphold the contention originated by the State mineralogist in this matter, in all possible ways.

Resolved, that a copy of these resolutions be forwarded to Governor-elect Hiram W. Johnson, as embodying the sentiments of leading producers and other business men of California included in the membership of the Home Industry League of California, and that his aid is requested in the protection of home industries, with the confident belief that he will, in this as in other matters, show his loyalty to California.

Architect U. M. Dustman has written an interesting book of "Plans and Building Construction" which the author states is different from any book of its kind, in that it contains—besides the plans for 150 modern houses, bungalows, barns, etc.,—a great deal of information not generally known outside the building trades; information which the building public wants.

Besides being of great value, the book will be an interesting addition to your library. Price, $2. Mr. Charles C. Thompson, publishers, 545 Wabash avenue, Chicago, Ill.

HEATING AND LIGHTING

Plumbing and Electrical Work

Central Station Heating.*

THIS subject is not a new one to the most of the managers of electric light and power companies; a great deal has been said and considerable more should be said. Unfortunately, some of the statements that have been made have not left the inquirer with the best impression as to the results to be obtained either from a commercial stand point or as to the quality of the service rendered.

Since the time of its conception, about thirty-five years ago, there have been a great number of plants installed, some where the method of distributing the heat was by steam, others by hot water, circulated through mains laid in the street and alleys.

In the early days little was known regarding the conduct of the central station heating business or the proper methods of installing the system, or the efficiency and depreciation of the different materials used for insulating the underground distributing mains. To the lack of this information were due a number of the district heating plant failures, financially and otherwise; however, the percentage of failures was far less than those which occurred in the electric light and railway business.

Today, the best methods of insulating and installing district heating systems are very familiar to the central station heating engineer, and with the modern methods of construction, operation and management, and with equitable rates of charge for heating service, the heating plants are producing very attractive returns on the investment.

It is not true that a district heating system would be a dividend producer everywhere, but each locality has its particular conditions governing the success of the business, and there is no rule or set of rules that govern this condition of success.

There are now so many district heating plants that are remarkably successful that it ill behooves the manager of any electric light and power or electric railway company whose station is located within a mile of the business section of a city to ignore the subject and consider district heating prohibitive in his particular case, without getting definite information from some reliable source, and from engineers with experience in this particular branch of central station work.

Almost from the first the advocates of central station heating have had the opposition of the consulting engineer and the engine manufacturers, and it is only very recently that they have accepted the statements of results obtained from district heating as a matter of fact, and in some cases they have been forced by their clients to recognize the heating system as an important revenue producer.

In the case of the engine manufacturers it is readily seen why they did not want a heating system installed to operate in connection with their engines, utilizing the exhaust from said engine to supply the heating system, as it would not allow the engine to operate at a high efficiency, in other words, instead of producing a K. W. H. at full load with from 18 to 20 pounds of steam the consumption in extreme cold weather would be from 40 to 50 pounds of steam per K. W. H.

From the first impression of these figures it would seem that the consulting engineer and engine manufacturer were justified in their opposition to a heating system being attached to the engine. Let us carry this investigation a little further and assume for the sake of comparison that the electric load is 5000 K. W., that the prime movers are of compound Corliss type to be operated condensing under a 26-inch vacuum, and the manufacturer's guarantee is 20 pounds per kw-hour or a total of 100,000 pounds of steam per hour required.

Now, let us assume that the engines are to be operated noncondensing and exhaust to a heating system resulting in a maximum back pressure of five pounds and that the consumption of steam by the engine will be 45 pounds per kw-hour, or a total of 225,000 pounds of steam required.

In either case we have 5000 kw-hours of electric current for sale, the revenue from which will be the same; this we will assume is 5 cents per kw-hour, or $250 total revenue.

In the case of the plant operating with a heating system we have, in addition to the $250 revenue from the sale of elec-

*Paper presented at the second annual meeting of the National District Heating Association, by F. O. Stevens, of Chicago.

tric current, 225,000 pounds of steam for heating, from the sale of which at a rate of 60 cents per 1000 pounds would produce $135,or a total revenue of $385.

It will be seen that in the case of the heating system it required 125,000 pounds more steam to produce 5,000 kw-hours of current. Assuming that the coal cost $2.50 per ton, water 5 cents per 1000 gallons, and firing 30 cents per ton, with an evaporative efficiency of 7 pounds of water per pound of coal burned, the manufacturing cost of steam would be 21 cents per 1,000 pounds, or a total extra cost of $26.25 to generate 5,000 kw-hours of electric current, or a net gain of $108.75 in favor of the heating system.

The above is also true of plants of smaller size, and the ratio of increase in revenue is approximately the same. The best results are obtained where due consideration is given the heating system when selecting the prime mover to be installed.

In conclusion, let me impress firmly upon your minds that in considering the district heating business it should be assumed that you are to manufacture steam for no other purpose than heating, not considering the exhaust steam a by-product, but let the profit increase in nearly the same ratio that exhaust is used instead of live steam, or consider the electric output the by-product.

Acoustics and Ventilation

The following is taken from a discussion before the Heating Engineers' Society:

Prof. J. H. Kinealy: I have had occasion to look into the question of interference of ventilating apparatus with the acoustics of audience halls. In one case the air was supplied to the hall from openings just in front of and under the stage. In the other case, a large part of the air was supplied through the floor upwards, directly in front of the stage. But in neither case did the entering air in any way affect the acoustics of the hall. They were, as far as I could tell, exactly the same, whether the ventilating system was running or not. I have yet to find a hall where the acoustics have been interfered with by the supply of air for ventilating purposes.

Mr. W. W. Macon: Prof. Sabine of Harvard University states that, as a result of some tests, a heated column of air has interfered with the proper transmission of sound. He says that it is altogether unnecessary to attempt to move the air in the direction in which the voice or the sound is supposed to carry, that the sound travels rapidly, about 1,000 feet per second, and if we were to try to ventilate this auditorium and attempt to push the air all forward from the stage at perhaps 10 feet per second, we would find that during the time in which the air would travel ⅛ inch, the sound would reach the rear of the hall, so we would not have the effect of being intercepted by the air. He also states that a higher temperature of the air in the upper part of an auditorium has a tendency to force the sound waves downward.

Mr. John F. Hale: Some years ago I was working on a plan for heating a theater and I located two radiators in front of the stage. When I submitted my drawings to the architect, I received a lecture on the acoustic properties of a theater, the architect stating that the heat rising from the radiators in front of the stage would form a curtain between the people on the stage and the audience and interfere with the carrying of sound. He stated at that time that the best practice was to admit the air on the sides of the stage and arrange the ventilating system so that the movement of the air would be toward the audience.

Estimating Plumbing Work

IN ESTIMATING plumbing work the question often arises as to who is to profit by an estimator's or contractor's skill in design, economy of management or closeness in buying. That is, suppose by rearranging fixtures an estimator saw where he could save $500 on an operation; should he figure on the work as planned and pocket the difference between the cost as originally laid out and as rearranged, or should he estimate on the lower cost of the work and give to the owner the benefit of the saving?

There is no doubt but that if an estimator knew positively that he alone possessed sufficient skill to lay out the work so economically he would be perfectly justified in reaping the reward of merit and add to the profit account of his ledger the money saved by economical design. But right there is where the stumbling block lies. No man is so clever but others will be found who can show equal results, and the estimator who figures that he alone can lay out work economically will learn to his sorrow that other minds are equally bright, and many of the choice contracts he hoped to carry off will go to rival shops. The only safe way is for an estimator to assume that his competitors are more clever than he is, and that in order to bid lower than the others he must find the very lowest cost he can satisfactorily do the work for, then know the profit he is willing to do the work for, add it, and be satisfied whether he wins or loses. If he wins the profit is his. If he loses it is with the knowledge that he could not have taken off another dollar, so he has nothing to regret.

A writer in Modern Sanitation, states an estimator must not assume, however, that because he could not do work cheaper the competitor who took it at a lower figure will lose money. Perhaps

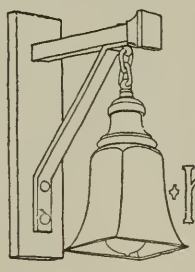
his skill in design is greater than yours, or he has some other method of procedure which enables him to do the work at a lower price. It is a good plan for an estimator when he has lost a contract for being too high, after he has figured his lowest, to inspect the work of his competitor from time to time as the installation progresses, to see if he can discover either in design, workmanship or materials, wherein the difference lies between his cost for a certain piece of work and his competitor's.

The percentage of profit to add to an estimate will depend greatly upon the character of the work. If the work is hazardous, where there is danger of losing considerable if everything does not go right, with but little chance for profit even under the most favorable circumstances, a percentage of from 50 to 60 per cent. would be considered a fair profit. For example, suppose a house sewer and water pipe were to be extended from the old work just inside a cellar wall to the sewer and water pipes in the street; that the soil to be excavated through was treacherous, likely to cave or give other trouble, and the street was a busy thoroughfare, where accidents might happen due to having the street open. In such a case, if the cost of doing the work were $200, a profit of 50 per cent or even 60 per cent would not be excessive.

In ordinary work within buildings, however, no such percentage would secure work. Ordinarily, on all work in small cities, and on small installations in large cities, the allowance is from 15 to 20 per cent, while on large work in large cities the allowance is from 8 to 10 per cent, according to the nature of the operation. For instance, in an operation where most of the cost is for fixtures and very little for labor, as is the case when the fixtures are well bunched together, an allowance of 8 per cent might be all that an estimator could allow with a chance of winning. Take, for instance, a toilet room, or a couple of toilet rooms, at an institution where 80 fixtures, each averaging $35, are to be installed and where three workmen in 30 days can install the material. In such a case the cost of labor, which is the uncertain element in a plumbing estimate, bears but a slight proportion to the entire cost, and the signing of such a contract is almost like selling the goods on delivery. That being true, and there being no delay for the money, the contractor could better afford to do the work for a profit of 8 per cent than he could other classes of work where the cost of labor is the chief item for a profit of 10 per cent.

Book Reviews

Several very useful hand books for concrete users recently have been published by the Norman W. Henley Company of 132 Nassau street, New York, and may be had on receipt of the price of each, 50 cents. The books have been prepared by A. A. Houghton, an authority on concrete construction. Each volume is fully illustrated and the subject is treated in plain English so all can readily understand the valuable ideas presented. The list includes "Concrete Wall Forms," "Concrete Floors and Sidewalks," "Concrete Silos," "Molding and Curing Ornamental Concrete," "Artistic Concrete Bridges," "Concrete for Farm and Shop," etc.



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"How to Know Architecture," is the title of a modern treatise on the subject by Frank E. Wallis, and just published by Harper & Brothers, New York; price, $2. After you have read this book you can look at any building and name its style of architecture. Architecture and building are covered as two branches of one subject. The object of the author can be plainly put thus: "After you have read this book you can, on looking at a building, say to what style and what period it belongs." Also, this is the first book on architecture to be illustrated by American models chosen for examples by the author. The style of the book is direct and concise.

Humphrey Company in New Quarters

The Oakland office and display room of the Humphrey Company has been changed from 1313 Broadway to 1156-60 Washington street—Schlueter's Department store. The company has been favored with a very prominent space by Mr. Schlueter, and has installed a very complete display of Humphrey heaters ready for operation. Owing to the prominence of the A. Schlueter company and the delightful satisfaction the Humphrey heaters are giving, as the many personal letters to the management attest, the demand for Humphrey goods is expected to continue to increase.

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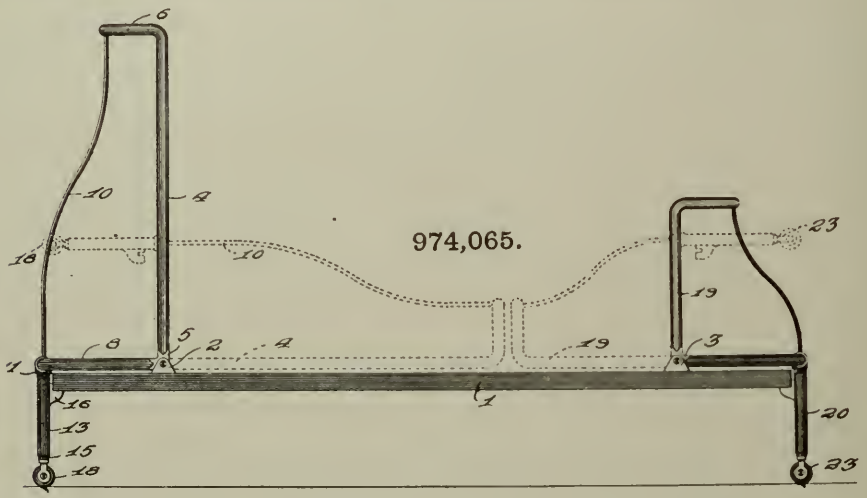

Recent Patents Relating to Building Construction

Material for this department is compiled expressly for the Architect and Engineer by Watson & Boyden, patent and trade-mark lawyers and solicitors, 918 F street, Washington, D. C., and to them all inquiries in regard to patents, trade-marks, copyrights, etc., and litigation affecting the same should be addressed.

A complete printed copy of the specification and drawing of any United States patent in print will be sent, postpaid, to any address for ten cents.

Harry A. Javins, of Burlingame, Cal., Assignor to Javins Manufacturing Company, a Corporation of Arizona Territory.—Wall Bed.

974,065. Patented Oct. 25, 1910.

This invention relates to folding beds of that type which are adapted to be tilted up into an alcove in the wall when not in use. The head and feet sections are arranged to fold over into the position shown in dotted lines so that the

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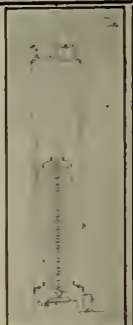
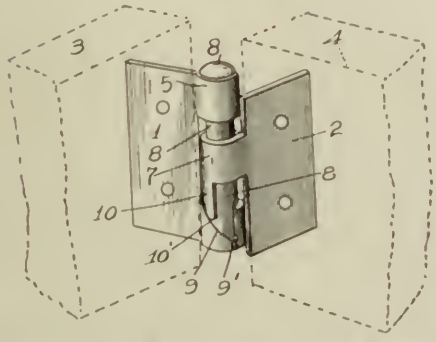


whole bed may be readily contained in the alcove. The construction appears strong simple and compact.

976,392.



William D. Paynter, of Grass Valley, Cal.—Hinge.

976,392. Patented Nov. 22, 1910.

This invention relates to the general class of hinges commonly known as self-closing, having for their object the closing of a swinging part by gravity. The object of the invention is to provide a simple and effective hinge of this character which may be swung to and remain in wide open position, the tendency to shut being removed after a certain position is reached. The illustration shows a perspective view of the improved hinge as applied to a door.

Changes in Building Ordinances

At a meeting of the legislation committee of the Los Angeles City Council considerable friction was manifested between interested parties and city officials having the enforcement of the fire escape ordinance. Building Superintendent J. J. Backus became incensed by an attack on his veracity, and a hot discussion followed. The committee also heard arguments relative to a reduction of the thickness of brick walls, it being contended that the building ordinance called for arbitrary dimensions and an unneces-

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sary burden upon bidders. The petitions presented a scale, running from the basement to the height of ten stories, calling for a horizontal reduction of four inches in all walls throughout the entire structure. At the request of Superintendent Backus, a committee will be appointed to take up the matter and report at the next meeting.

Restriction Clause Valid

A decision of considerable importance to owners of property in restricted residence districts, was rendered by Judge Munroe of the Superior courts, last week and establishes the validity of the clause in a deed. The action was brought by G. E. Van Guysling against Rev. George Ringo of Los Angeles to restrain him from erecting on his property at 2439 Adams place a building costing less than $3,000, to be used for residence purposes. The case has attracted unusual interest and has occupied the attention of four local judges. The action originally came up before Judge Bordwell, who issued a restraining order. The defendant, however, continued with the work and was subsequently brought before Judge James on contempt proceedings. He contended that he was building a garage and the action was dismissed. The building was then completed and fully equipped with bathroom, living-room, kitchen, etc. Further proceedings were then issued and the case transferred to Judge McCormick's department and by him sent to Judge Monroe, who heard the evidence and rendered a decision accordingly. The building can not in any manner be used as a dwelling.

Engineering Contractors

The American Society of Engineering Contractors has been in existence for a year and a half. Its membership now numbers between 750 and 800. The headquarters of the organization are in the Park Row building, New York City, where a library is maintained for the use of the members, and the different technical magazines are kept on file.

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By the Way

Some Industrial Information Worth the While

Oak Flooring vs. Carpets

The ordinary home builder is often misled in regard to oak flooring prices. Oak flooring is cheaper than carpets. A yard of carpet is 27 inches wide by 3 feet in length; thus a carpet yard contains 6¾ square feet. Carpet sells at from $2.00 to $9.00 per yard. A fair average of good quality of carpet would be about $3.00 per yard. Clear quartered oak flooring ⅞ inch thick by 1½ or 2 inch faces can be bought, laid and polished for $1.00 per carpet yard. This is about one-third the price of good carpet. Oak flooring beautifies any house, and exhibits more taste and a greater degree of elegance than any carpet that was ever made.

The living, renting and selling values of any building is vastly increased by oak flooring. Three-eighths inch thickness is used very extensively for reconstruction work, where it may be laid over old floors very economically, taking the place of carpets without in any way interfering with the woodwork of a room. A parlor, library, hall or dining-room is half furnished when it is laid with handsome oak flooring. It gives an air of refinement and elegance to a home, is rich in color, and if given some attention will never wear out.

Thirteen-sixteenth inch thickness makes a much more substantial floor, and can be used with or without a sub-floor.

The ⅜-inch thickness when laid has all the appearance of heavy flooring.

Oak flooring is hygienic and is very easily and economically cared for after being laid. No modern home nowadays is complete unless floored with hardwood flooring, and undeniably oak flooring is the monarch of all.

Condemn Corrugated Iron Culverts

From the Stockton Independent.

It is very probable that only concrete culverts will be used hereafter by the engineering department of the highway commission in the construction of good roads throughout the county, as provided for in the recent bond issue. Up to date a corrugated iron culvert has been used on a number of the roads, including the Waterloo, the Cherokee Lane, Mariposa and Lower Sacramento highways.

For several months the farmers have been complaining about the use of the corrugated iron culverts, claiming that they were short lived at best and that to install them was a waste of money. While the material is generally referred to as corrugated iron it is not the material used as such. It is a special product used for culvert work and is strongly recommended by many engineers.

After installing about forty of the iron culverts it is understood that the commissioners have decided to install concrete culverts hereafter. The difference in price between the two materials is about $7 in favor of the iron. It is contended for the concrete culverts that their life is practically unlimited, and once installed need no further care or expense.

Southern Pacific Co.'s New Depot, Tulare, Cal. D. J. Patterson, Architect

THIS cut shows the new depot now being built at Tulare and which is being faced with **"Golden Gate Sandstone" Brick** made of sand and lime at our **Antioch** factory. We also sold the Del Monte (white Monterey) sand, red brick and crushed rock for this building. ***Do you ever buy sand, rock or gravel in car load lots?*** If you need any sand, rock or gravel for any interior points such as Tulare, Fresno, Sacramento, Richmond, etc., let us quote you and submit samples, for we can not only ship from our Antioch pit but we are able to supply you from a pit in the San Joaquin Valley as well as a convenient point in the Sacramento Valley.
GOLDEN GATE BRICK CO., C. F. PRATT, Manager, **660 Market St.,** Opposite Palace Hotel.

The Gates Reinforced Concrete Railroad Tie

The daily press has reported the purchase by railroad interests of the Gates reinforced concrete tie patents for something like $17,000,000. No official confirmation of the sale has been made, however, and the fact that there are a number of other similar patents on the market has led many to doubt the reported Gates deal.

It was about ten years ago that Gates first conceived the idea of a concrete tie as a substitute for the wooden tie. He foresaw that there was a time coming when the railroads would be seeking something more durable and less expensive.

He cast thousands and thousands of concrete ties in those years and was not disheartened when they failed to stand tests and crumbled and cracked under the vibration of heavy traffic.

One day about two years ago he was leaning against a barbed wire fence. "I will just cast some of these barbed wires in the concrete," he thought. It was a happy thought and one that afterwards proved to be worth millions.

Ties were cast with barbed wire strands running lengthwise. Tests showed that 36 strands twisted in a certain manner obtained the best results. Several of these ties were finally placed in the San Jose railroad yards where they successfully withstood the wear and tear of transcontinental traffic. The heaviest engines on the Coast division were brought into use and the tie submitted to the most rigorous tests.

Sanitary Equipment for Barns

The De Laval Dairy Supply Company of San Francisco, Los Angeles, Portland and Seattle, besides being the Coast distributors of the well-known De Laval cream separators for hotel and private use, carry a complete line of the James Sanitary Barn equipment, including stalls, stanchions, feed and litter carriers.

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Architects designing stables and frame buildings should bear in mind the James equipment and specify it so far as possible. It has many commendable points. The James sanitary steel stall has revolutionized the dairy world. Some of its features are: Alignment of stanchions so that long and short cows are lined evenly on the gutter; double chain hanger stanchions, which permit the use of a level concrete curb at the bottom of the stanchion eight inches high, preventing any possible chance of the cattle wasting their feed; sure stop swinging post, which prevents cattle from putting their heads in the wrong places; self-cleaning divided mangers, each cow getting her own feed and no more. A complete catalog will be mailed by any of the Coast offices on receipt of request.

San Francisco Lime News

W. S. McLean, of the Holmes Lime Company, says, "Our trade in 'Diamond' finishing lime for plastering is greater with each succeeding month, and it is now difficult for us to obtain enough to supply orders. Our brick lime is also moving steadily and giving entire satisfaction. The market on hydrated lime is becoming quite active, as many fruit growers through the interior of the state are beginning to spray, and use large quantities of hydrated lime, both 'Vigorite' and 'Diamond' brands, for this purpose. We are also making large shipments of the 'Vigorite' brand to Oregon and Washington, where it is being used with reinforced concrete for the purpose of making it waterproof. We have a contract with the John Horstman Chemical Company to furnish their full supply of lime rock for one year. They are large users of this material, and after a test have decided to use that of the Holmes Lime Company. Our lime being a quality lime we have led the market for high prices, and today are getting more per barrel, not only in the local, but also in the interior and export trade, than others in the same line."

The offices of the Holmes Lime Company, which have been located in the Mutual Bank building for about three years past, have been moved to room 273 Monadnock building.

The Berger Manufacturing Company Catalog

Those interested in metal ceilings and especially the "Classik" metal ceilings made by the Berger Manufacturing Company of Canton, Ohio, should not fail to secure one of their new catalogs. This complete and amply illustrated booklet contains 420 pages of interesting information covering the eleven distinct classified designs and hundreds of combinations turned out by this enterprising corporation. It is ready for mailing on application.

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When writing to Advertisers mentinn this Magazine.

Meurer Bros. Have Fine San Francisco Warehouse

Architects and the trade have noted with interest that Mr. A. H. McDonald, the Pacific coast manager of Meurer Bros.' Co., manufacturers of tin plate, metal shingles, etc., has moved to larger and more central quarters at 628-630 Third street, San Francisco. Here the growing business can be handled with better dispatch and greater convenience to the trade. Shipments can be made from large stocks of various specialties manufactured by Meurer Bros. Co., including metal Spanish and Mission tiles, in tin and galvanized; the Columbia metal shingle, Meurer tinned iron sheets, Meurer old method, Meurer roofing, flushing, Pullman and other brands that have been long and favorably known to the architectural profession and used by the trade at large.

A tin roof is a good roof and this is being made daily more evident from the failure of cheaper roofing substitutes.

Meurer Bros. Co. tin plate works are located at Washington, Pa., in the heart of the Pittsburg district, where their facilities are such that all grades of plate can be produced with best results. Only the best open hearth selected plates are used, and all wasters or imperfect sheets are rigidly excluded. Every sheet is stamped with the name of the brand and thickness, giving architect and owner assurance that their specifications will be carried out.

The Meurer product is one of the best known on the market and the success of the metal Spanish and Mission tiles with the absolutely water tight lock, which is patented, has naturally led others to endeavor to imitate them. The many prominent buildings, public and private, covered with these goods tell the story of their success and indicate what the trade thinks of them. Following is a list of some of the buildings:

U. S. Post Office, Eureka, Cal., covered with Meurer's Genuine Tinned Iron Sheets.

U. S. Navy Department of Supplies, Vallejo, Cal., covered with Meurer's IC Old Method.

U. S. Government buildings at Presido, Cal., covered with Meurer's IX Old Method.

San Quentin Prison, Main Cell Building, covered with Meurer's IC Old Method.

Marin County Court House, San Rafael, Cal., now being recovered with Meurer's IC Old Method.

Notre Dame Academy, San Jose, Cal., covered with Meurer's Genuine Tinned Iron Sheets.

Meurer Bros. still import from Wales their well known Meurer Genuine tinned iron sheets, which brand for many years

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has been the only absolutely pure charcoal iron roofing plate on the market. This brand has been used by the United States government where the best grade of tin was required over claims of many so-called equals.

Del Monte White Sand

The Pacific Improvement Company, which owns large tracts of land in the vicinity of Monterey, report a steady increase of business in Del Monte white sand, which is about the finest and purest on the coast. T. G. Poston is in charge of the San Francisco selling end of this material, with offices in the Crocker building. A good deal of this sand is used with Medusa white cement for facing the better class of buildings and other fine work, though it is not used in general construction work on account of the high cost. It is also extensively used by local glass manufacturers, and altogether a heavy tonnage is shipped every day. The sand is loaded on the cars from the banks near the Del Monte beach by means of wheelbarrows. The company has a steam shovel which was formerly used for this purpose, but owing to the nature of the ground it was found more economical to stick to the primitive method.

Favorable Report of White Sandstone

That California has a very high grade of white sandstone is shown by the attached report of Robert W. Hunt & Company, of an analysis made of stone quarried in Amador County, Cal., by the Ione Sandstone Company of Sacramento. The test is splendid proof that the Golden State need not go East for its building materials, for our home product in this particular, at least, is equal if not better than anything that has been produced in outside quarries. It is hoped that the Oakland city authorities will bear this in mind when selecting a stone for their million dollar city hall, and it is need-

(Concluded on Page 119.)

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THE ART IN ARCHITECTURE

Artistic merit in Architecture depends to a certain extent upon color. On account of the importance of this factor, too much care cannot be exercised in attaining desired tones.

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White enamel work has a peculiar charm and richness. Our Satinette White Enamel proves its superiority wherever it is used on church, residence, office building and public institution. It does not turn yellow, it is easily cleaned and does not crack. It may be finished with a dull, flat effect or rich gloss. Satinette Undercoat should always be used for priming and undercoats for Satinette White Enamel work.

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(Continued from Page 117.)

less to say that State Mineralogist Aubury will not overlook the fact in his correspondence with the United States Treasury Department. The report follows:

Ione Sandstone Co., Oschner Building, Sacramento, Cal.

Gentlemen—We herewith beg to report on a sample of sandstone received November 8, 1910, by mail from Sacramento, Cal. The analysis gave the following results.

Silica (SiO_2)	67.74%
Oxide of iron (Fe_2O_3)	0.71%
Oxide of aluminum (Al_2O_3)	22.73%
Oxide of calcium (CaO)	0.40%
Oxide of magnesium (MgO)	0.18%
Loss by ignition	8.16%
	99.92%

Respectfully submitted,
ROBERT W. HUNT & CO.,
S. R. Dauby, Chief Chemist.

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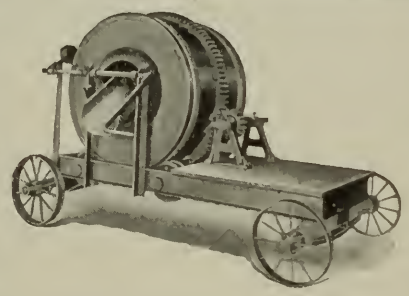

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Office and Fixture Room of Alex Coleman, San Francisco

New Office and Fixture Room of Well Known Plumbing Firm.

In these days when the tendency of the architect is to segregate all his work, the demand for thoroughly competent and reliable contractors in plumbing, electrical work, etc., is more noticeable than ever before. Once a plumber or a roofer has demonstrated to the architect his ability to do good work and at a fair price, he becomes a permanent asset to that office, and his bid is sought by both the architect and the owner.

Among the plumbers in San Francisco whose work has given satisfaction, and whose business in consequence is constantly increasing, is Alexander Coleman, who has recently taken possession of his new shop at 706 Ellis street, a photograph of which appears on this page. Mr. Coleman has a nice comfortable office here, besides ample room for displaying special fixtures and for the storage of general plumbing supplies. The location is central, and besides being close in, the office is supplied with telephone service for the convenience of architects and others who wish to call him on short notice.

One secret of Mr. Coleman's success is his close attention and personal supervision of all work contracted by him, together with the fact that he is a practical sanitary engineer, with twenty-six years' experience in the plumbing trade. As an authority on sanitation Mr. Coleman stands well to the fore.

Following is a list of some of the more important buildings for which he had the plumbing contracts, the work on each building running from $5,000 to $25,000: Hotel Turpin, Miles Hotel, Butler building, Cordes-Rochet building, Athmore apartments, Mullin apartments, Belmont hotel, Bull Estate building, Madison and Yerba Buena schools, and residence of Robert Countryman.

Collapse of a Sprinkler Tank

At 6 a. m., July 18, 1910, without any warning, the 5,000-gallon sprinkler tank of the West End theater, New York, elevated twelve feet above roof of stage portion, collapsed, and staves and contents of tank fell on roof over stage, on auditorium roof, on roof of adjoining flat house and on to street. The rush of water across stage roof carried four staves over the three-foot parapet wall and down to sidewalk of Hancock place, together with a six-foot length of two and one-half by sixteen-inch marble coping. Fortunately no one was passing at the time, as this is a drop of seventy-five feet. A large quantity of water entered

SOMETHING ENTIRELY NEW

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1154 PHELAN BUILDING SAN FRANCISCO, CAL.

the skylight and fell to the center of the stage.

The tank was of cedar, installed in 1902, and constituted the only water supply for the sprinkler equipment over the stage portion. There were nine ordinary flat hoops on the tank, the bursting of one of which must have caused all remaining hoops to give way simultaneously.

An examination of hoops after accident shows that they were as thin as paper in many places, and it is remarkable that a collapse did not occur long before this. The attention of the occupants had been called to the condition of these hoops as far back as June, 1906, but they did not feel disposed to make any change.—Quarterly of the N. F. P. A., October, 1910.

L. A. Norris Returns

After seven months spent in circling the globe in his little 64-foot yacht, the Seafarer, L. A. Norris, of Clinton Wire Fabric fame, has returned to his San Francisco home, well pleased with his remarkable journey.

The Seafarer was completed at Booth Bay, Me., late in April, and the voyage around the world was begun as soon as the little craft could be provisioned. From Boston it plowed its way across the Atlantic to the Mediterranean sea, thence through the Suez canal and the Red sea to the Indian ocean, and thence to the Pacific and home. The trip, from the day of leaving Boston, occupied 207 days. One of the principal stops was made at Singapore, which was left behind 75 days ago.

The trip for the most part was uneventful. The little vessel fought the big seas of the Atlantic bravely, and Captain Norris, who sailed the vessel, astonished the old seadogs by daring the typhoons of the Indian ocean. During the 207 days at sea the craft experienced some thick weather, especially in the Atlantic and just before entering the Pacific. It rode through the storms, although tossed about like a cork.

Model for Orpheum Marquise

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Fess Crude Oil Burners in the Palace Hotel Kitchen, San Francisco

The Fess System Crude Oil Burner

THE above cut illustrates the Fess system crude oil burner, in use in the Palace hotel, in San Francisco. Heretofore the greatest objection to oil burning for domestic purposes, has been the smoke nuisance. In a recent report issued by the United States government, it was estimated that the damage by smoke costs the American people more than $600,000,000 annually.

The Fess System Co., Inc., however, has succeeded in overcoming this evil, and has perfected an oil-burning plan which insures a clean, smokeless fire, and which unquestionably is the most economical method yet invented for burning crude oil.

These burners have been installed in steam boilers, hotel ranges, bake ovens, hot water heaters, and in almost every kind of appliance where a perfect fire and heat is necesary.

The system may be seen in successful operation at the Palace hotel, the Argonaut hotel, the Union Square hotel, and the new Stockton hotel.

The Fess Company manufactures a complete line of oil burners, to supply any type of furnace, from a cook stove to a power plant.

All future announcements of progress and improvements in crude oil burners will be made officially through the Architect and Engineer.

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THE Northern and Central California plumbing trade will be interested in the announcement that the California Plumbing Supply Company has been taken over by the California Steam and Plumbing Supply Company which latter concern is equipped with ample financial backing to insure a successful career. The new interests have had abundant experience in handling plumbing supplies,

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New quarters have been leased at the corner of Fifth and Bluxome streets, San Francisco, the building being a 2½-story brick, with 33,000 square feet of floor space for carrying one of the largest and most complete stocks of plumbing, steam and water works supplies on the Pacific Coast. Besides storage room considerable space is available for display purposes. This latter feature will be appreciated by the trade as the plumber can go and examine his goods if he chooses before purchasing. The executive offices of the company are on the ground floor and have been fitted up in an attractive manner.

The new location is an ideal one in that it is close to the business center of San Francisco with street car accommodations a short block distant. Spur tracks of the Southern Pacific Railroad Company pass the building, which greatly facilitate the loading and unloading of goods.

Besides a complete line of plumbing goods and specialties, the company carries a complete stock of pipe fittings and valves up to and including 12-inch, for steam, water and gas.

Mr. Alfred Fowle, who has had thirty years' experience in the manufacturing and jobbing of plumbers' and steam fitters' supplies, is president of the company, and Mr. Joseph R. Whalen is secretary and treasurer.

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What Asbestos is Made From

Asbestos is queer stuff. It is a sort of mineral-vegetable substance—both fibrous and crystaline, elastic and brittle. It is a stone that will float, and it may be carded, spun and woven like flax or silk. Asbestos is mined in practically every part of the world, and the asbestos of the country will differ as greatly in appearance from that of another country as with the foliage of the trees and plants native to each. There is, however, one quality that asbestos everywhere possesses—that is, its indestructibility. No known combination of acids affects the strength or, indeed, even the appearance of its fiber, and the fiercest flames leave it unscathed.

Certain varieties of asbestos are as compact in texture as marble, taking the highest polish, while other varieties show extremely loose, silky fibers. "Mountain wood" is a variety presenting an irregular, filamentous structure like wood and other forms of asbestos, taking their names from their resemblance to divers materials, are rock cork, mountain leather, fossil paper and fossil flax.

Asbestos is really a species of amphibole or hornblende, composed of separable filaments with silky lustre. Its color shows quite a range, passing through various shades of white, gray, green, brown, red and even black.

In some cities firemen are provided with asbestos clothing that practically defies the flames, the men being enabled to pass through a blaze unscathed if no longer time is required than the period during which the fireman can hold his breath. As we all know, asbestos roofing will eliminate all danger of fire from falling sparks. Millions of feet of steam pipes, boilers, etc., are covered with this material, so that all heat may be retained, while asbestos also forms a frost-proof protection for gas and water pipes. Asbestos is also indispensable to the electrical engineer.

One of the thousands of special uses to which asbestos is applied is that of covering walls. Instead of plaster, a single coat of asbestos is frequently placed upon the raw bricks. The wall may be covered as soon as built, and a room, the walls of which were completed in the morning, shows that night an interior as smoothly finished as glass and as hard as stone. Then, too, this glossy surface, while perfectly firm, will not crack, for it is very elastic.—Harper's Weekly.

Interior of Banking Room, London Paris National Bank, San Francisco
Albert Pissis Architect

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BY

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PACIFIC COAST STATES

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621 Monadnock Bldg.
San Francisco
50c a Copy
$1.50 a Year
Entered at the Post Office, San Francisco, as second class matter
Vol. XXIII. No. 3

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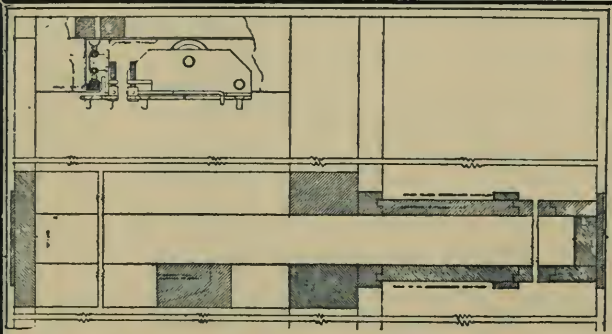

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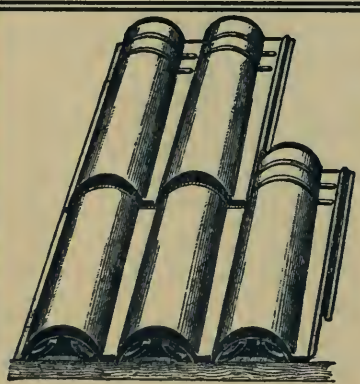

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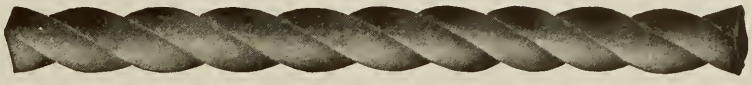

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SAN FRANCISCO SACRAMENTO LOS ANGELES

The Architect and Engineer
of California
Pacific Coast States

Terms of Subscription, $1.50 per Year

Single Copies, 25 Cents

Issued monthly in the interests of Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast.

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LIBRARY BUILDING, UNIVERSITY OF CALIFORNIA
John Galen Howard, Architect

Frontispiece
The Architect and Engineer
Year Book Number
January, 1911

PUBLIC LIBRARY

THE
Architect and Engineer
Of California

VOL. XXIII. JANUARY, 1911. No. 3.

Splendid Exhibition of the San Francisco Architectural Club*

By AUGUST G. HEADMAN, Retiring President

August G. Headman

THE convention of the Architectural League of the Pacific Coast and the architectural exhibition in conjunction with the same in October of last year was so helpful and its beneficial effects so lasting that it is with great pleasure that the San Francisco Architectural Club extends its welcome to the delegates of the annual convention of the American Institute of Architects. The fact that this convention is a national one justifies us in prophesying that it will leave its effect and influence upon architectural and art societies, as well as upon the general public. This influence as well as the stimulus it will give to civic pride and further development of the art education of the community cannot be overestimated.

The internate commingling of delegates from different sections of our country, the consequent discussions and debates of various efforts, methods, and ideals, all with a spirit of friendship, will produce a unity of thought, unto which the present chaotic forces must merge before architectural design shall become the true expression of the spirit of America.

In the matter of aesthetics there is a general awakening of our people, in the dawn of the century which is probably destined to bring out our highest development; the greatly increased facilities and opportunities now afforded the student of architecture in this country have undoubtedly largely grown out of this broadening interest of our people in architecture.

Now, as well as in the next few years to come, will be the critical time of our city's growth and it is hoped that these architectural exhibitions held each year by the San Francisco Architectural Club will promote the growth and development of local talent and bring before the public a good representative selection of architectural works, thereby developing a more general public interest in architecture and the decorative art.

The Club wishes to here record its regrets that the lack of available space in the catalogue and galleries precludes the publication and exhibition of much material of great interest and value illustrative of the progress in the art of architecture.

*The Exhibition Committee is composed of the following: W. B. Faville, chairman; Louis C. Mullgardt, Frederick H. Meyer, John Bakewell, Jr., Chas. Peter Weeks, Walter Parker, Thos. Bendell, H. E. Nye, John W. Bagley, Jr., and Geo. A. Thibault. The illustrations shown in the following pages were selected by the committee from the great number of excellent drawings submitted for exhibition purposes.

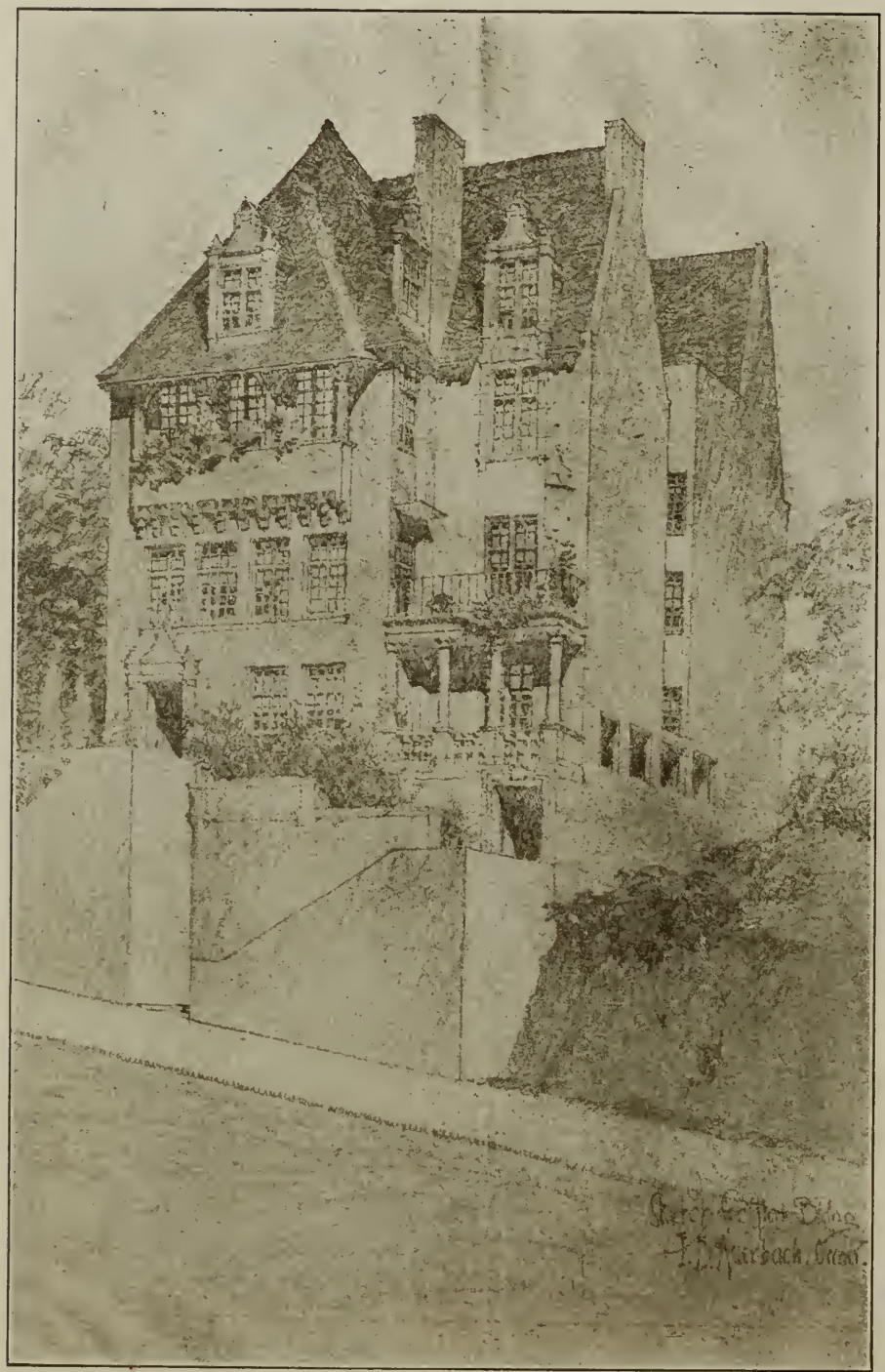
Engine House No. 41, San Francisco Fire Department
Loring P. Rixford, City Architect

Newhall Building, San Francisco
Lewis P. Hobart, Architect

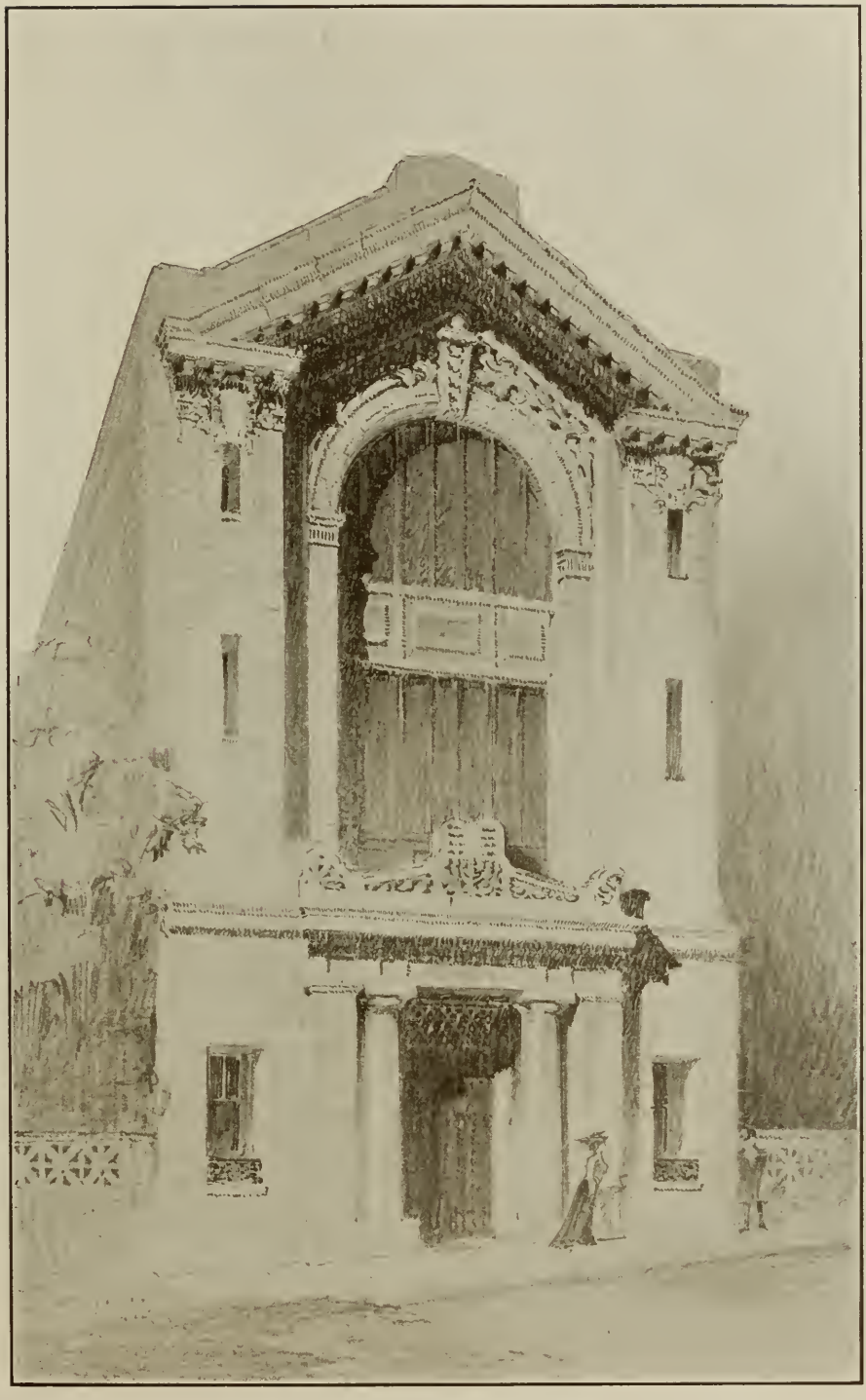
Apartment Hotel, San Francisco — *William Curlett & Son, Architects*

Study for a Residence

Coxhead & Coxhead, Architects



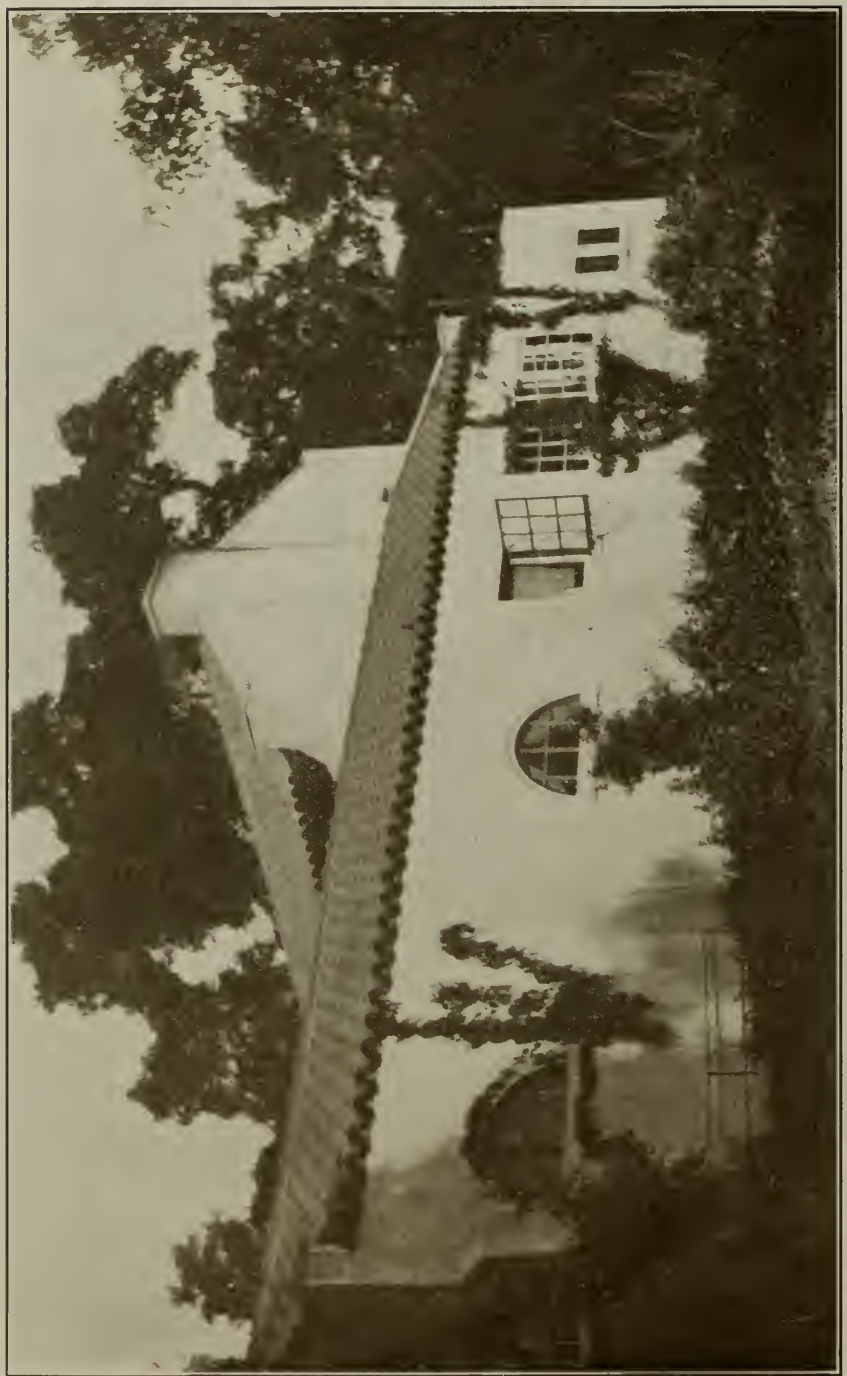
Flats for Mr. E. D. Auerbach, San Francisco
Albert Farr, Architect



Religious School for Congregation Emanu-El
Albert Henry Jacobs, Architect

Building for the Liverpool and London & Globe Insurance Company, San Francisco
Bliss & Faville, Architects

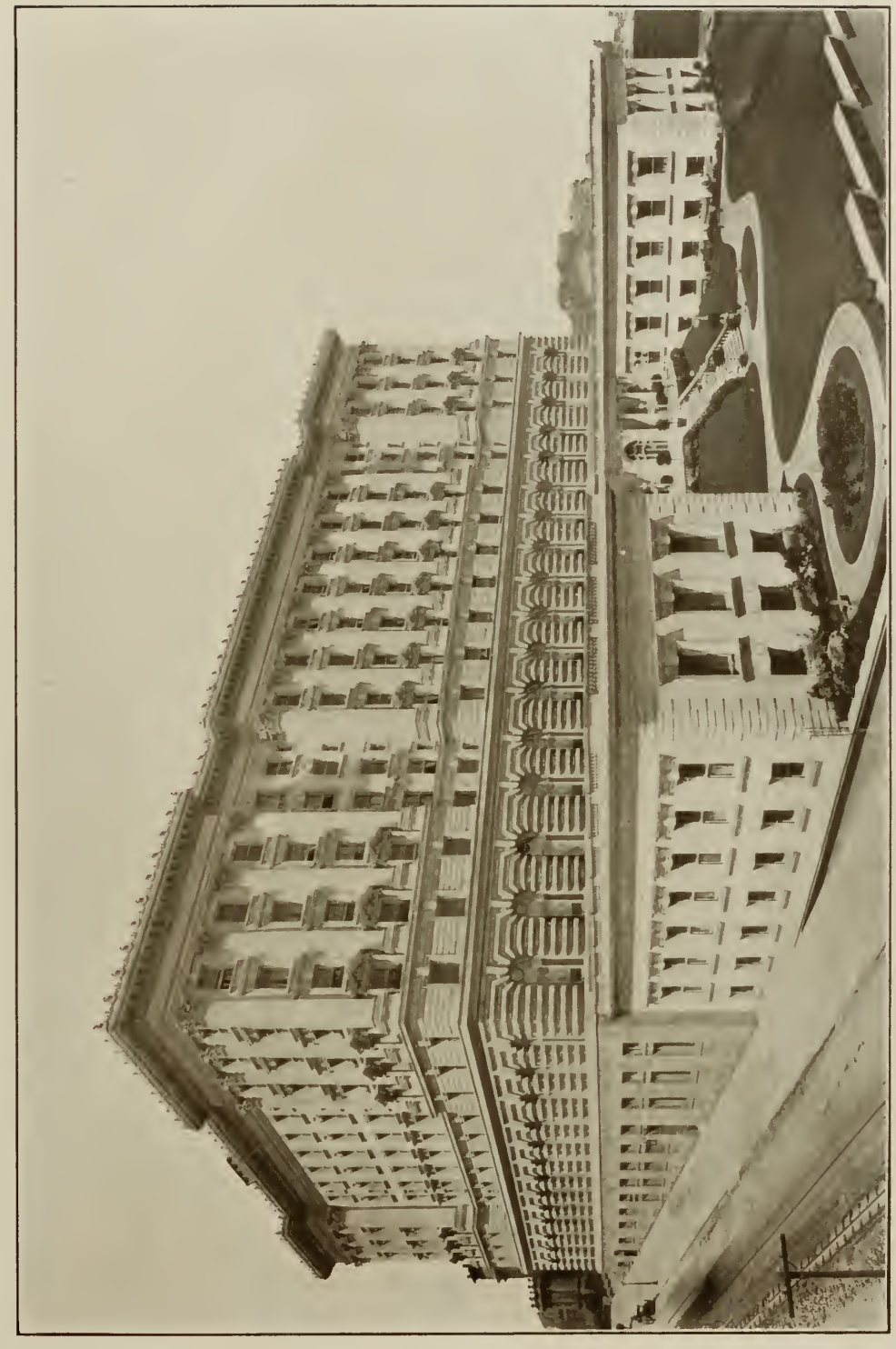
Hearst Memorial Mining Building, University of California
John Galen Howard, Architect



Residence of Mr. W. L. Grozvall, Fair Oaks, California
Albert Farr, Architect

Design for Oakland Bank Building
Frederick H. Meyer, Architect

Alaska Commercial Building, San Francisco
Meyers & Ward, Architects



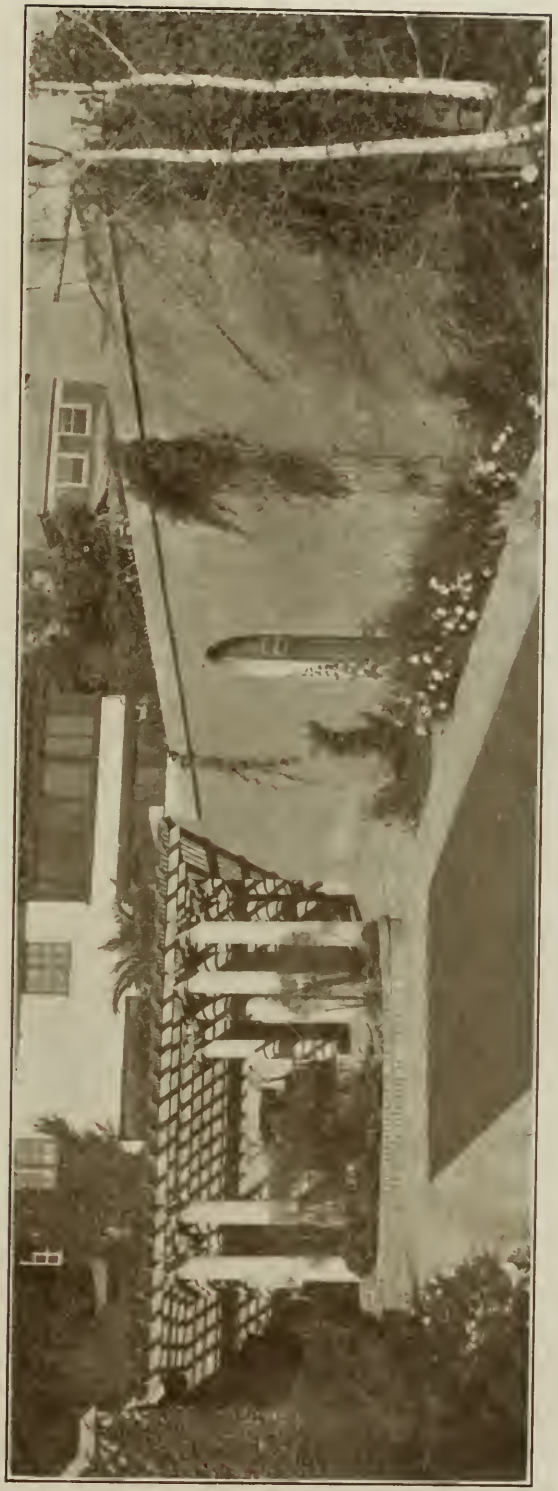
Fairmont Hotel, San Francisco

Reid Bros., Architects

Hotel San Marco, San Francisco
McDonald & Applegarth, Architects

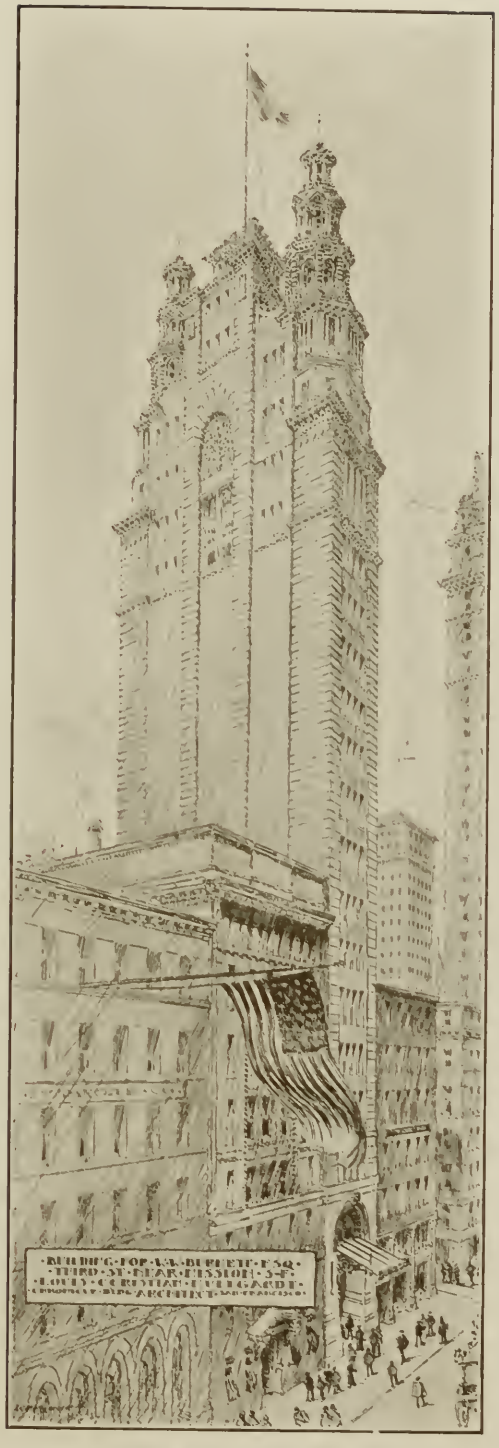
Club House, Mt. Diablo Country Club, Contra Costa County, California
William L. Woollett, Architect

Rotunda of City of Paris Building, San Francisco
Bakewell & Brown, Architects



Pergola and Fence, Estate of Adolph Uhl
Albert Farr, Architect

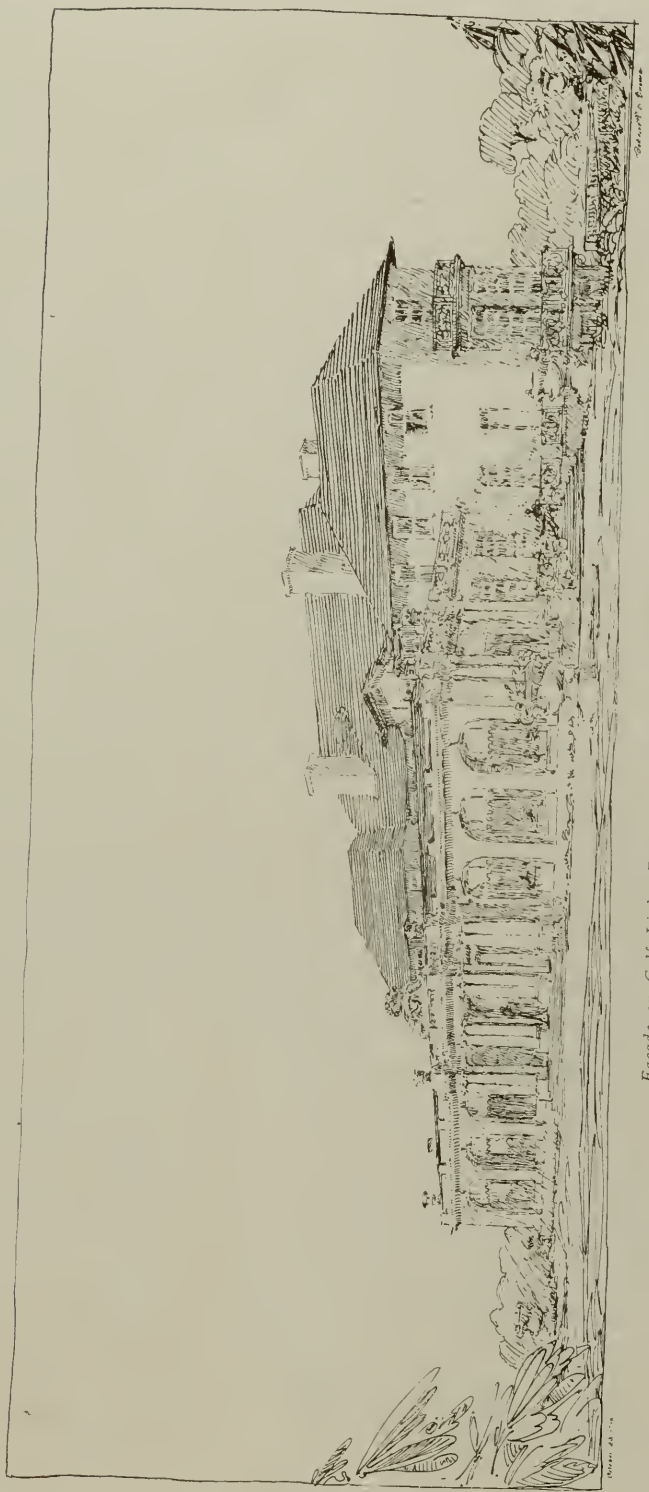
Residence of Mr. Charles W. Fore, Piedmont Park, California
Louis Christian Mullgardt, Architect



Building for W. W. Burnett, Esq., San Francisco
Louis Christian Mullgardt, Architect

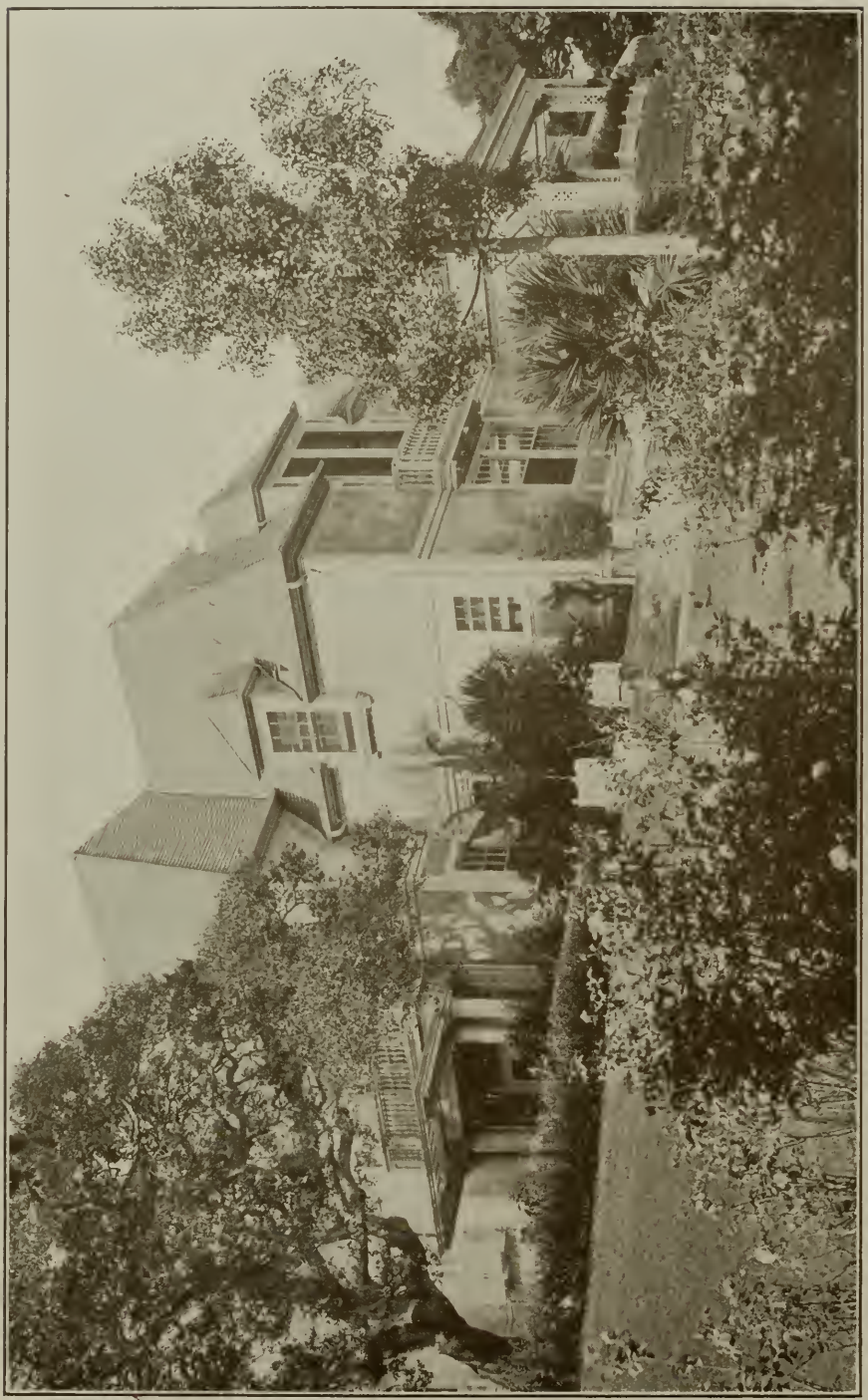
Arbor, the Moffatt Residence, Piedmont Park, California
Louis Christian Mullgardt, Architect

Staircase, the Moffatt Residence, Piedmont Park, California
Louis Christian Mullgardt, Architect



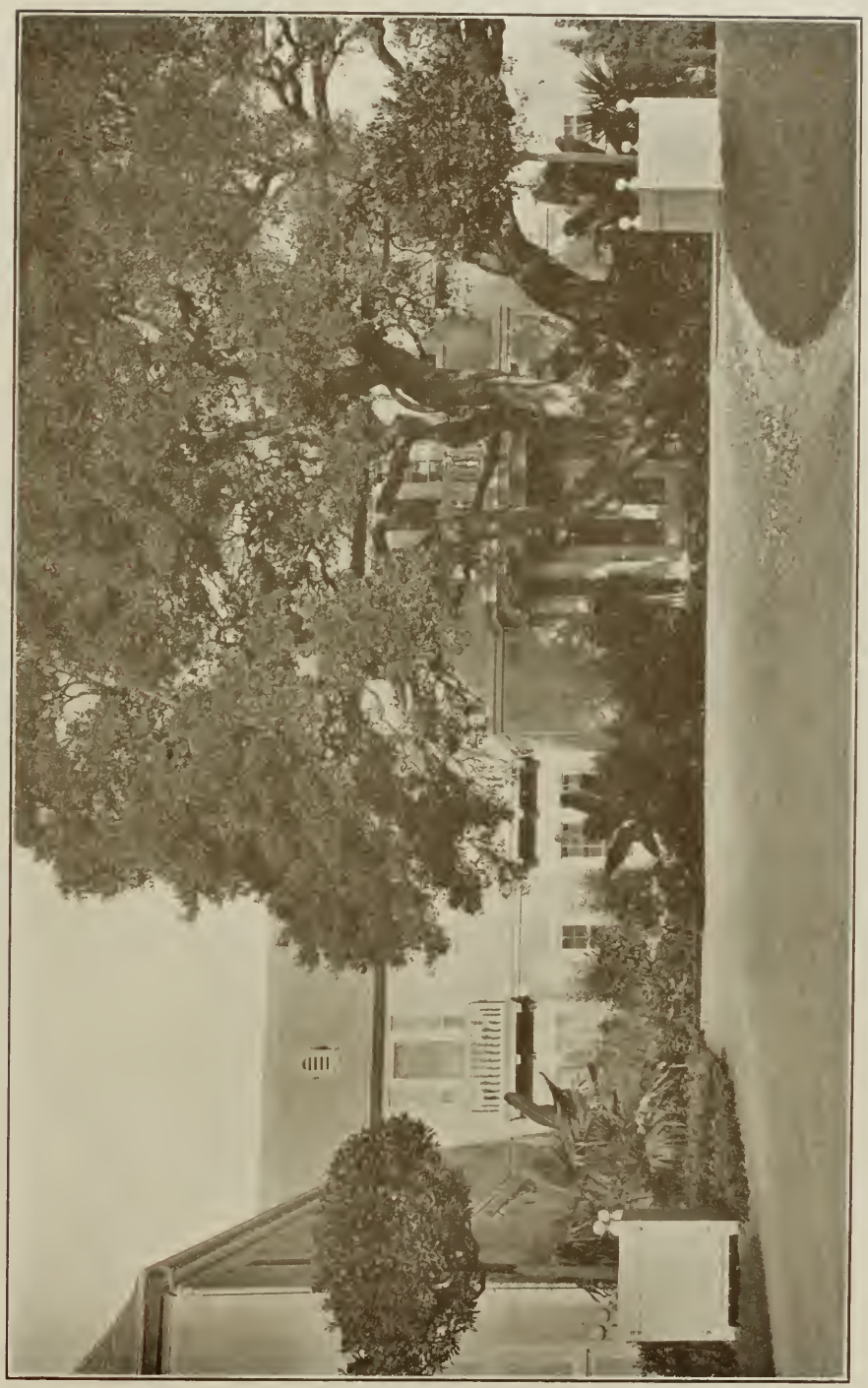
Facade on Golf Links, Burlingame Country Club, Burlingame, California
Bakewell & Brown, Architects

Water Temple, Spring Valley Water Company, Sunol, California — *D. H. Burnham & Company, Architects*

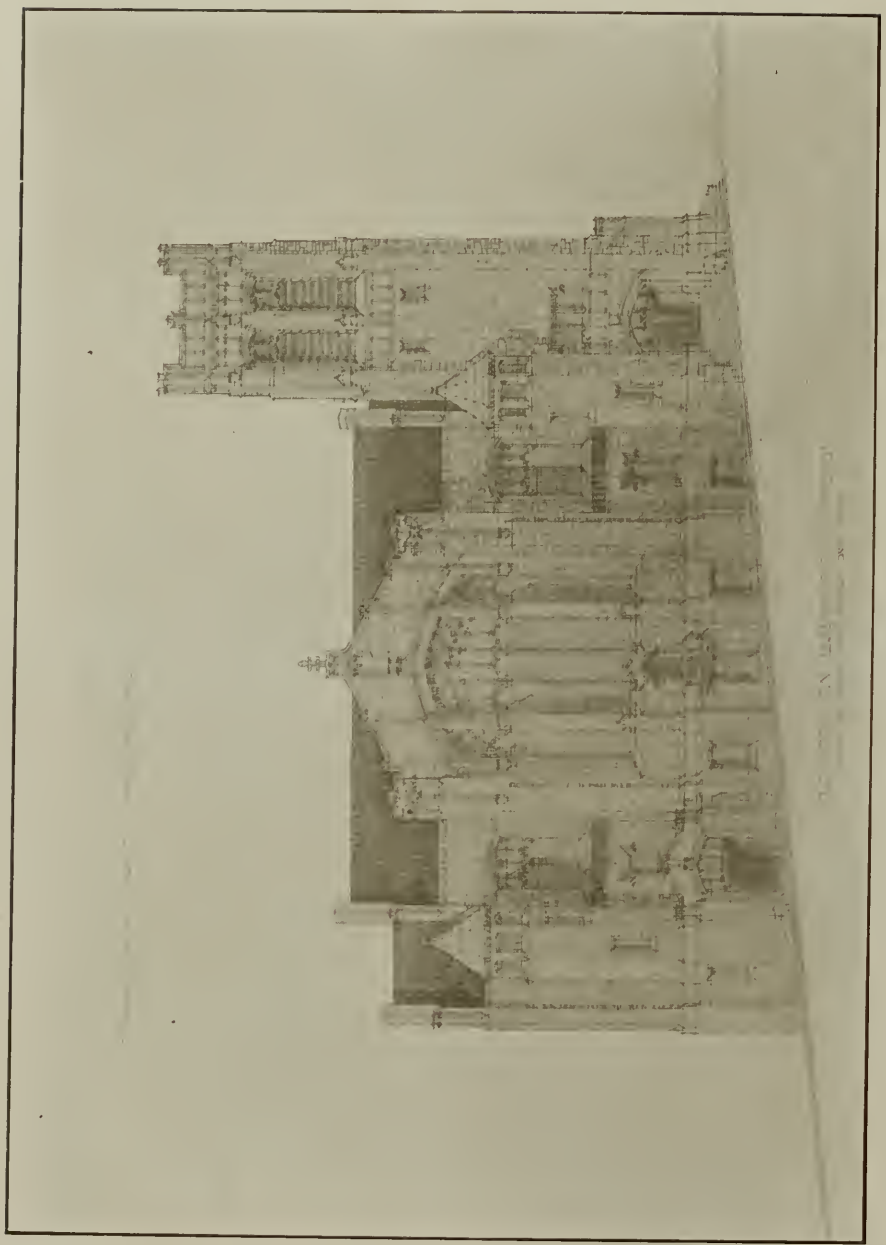


Residence of Mr. Insel M. Easton, Easton, California

Lewis P. Hobart, Architect



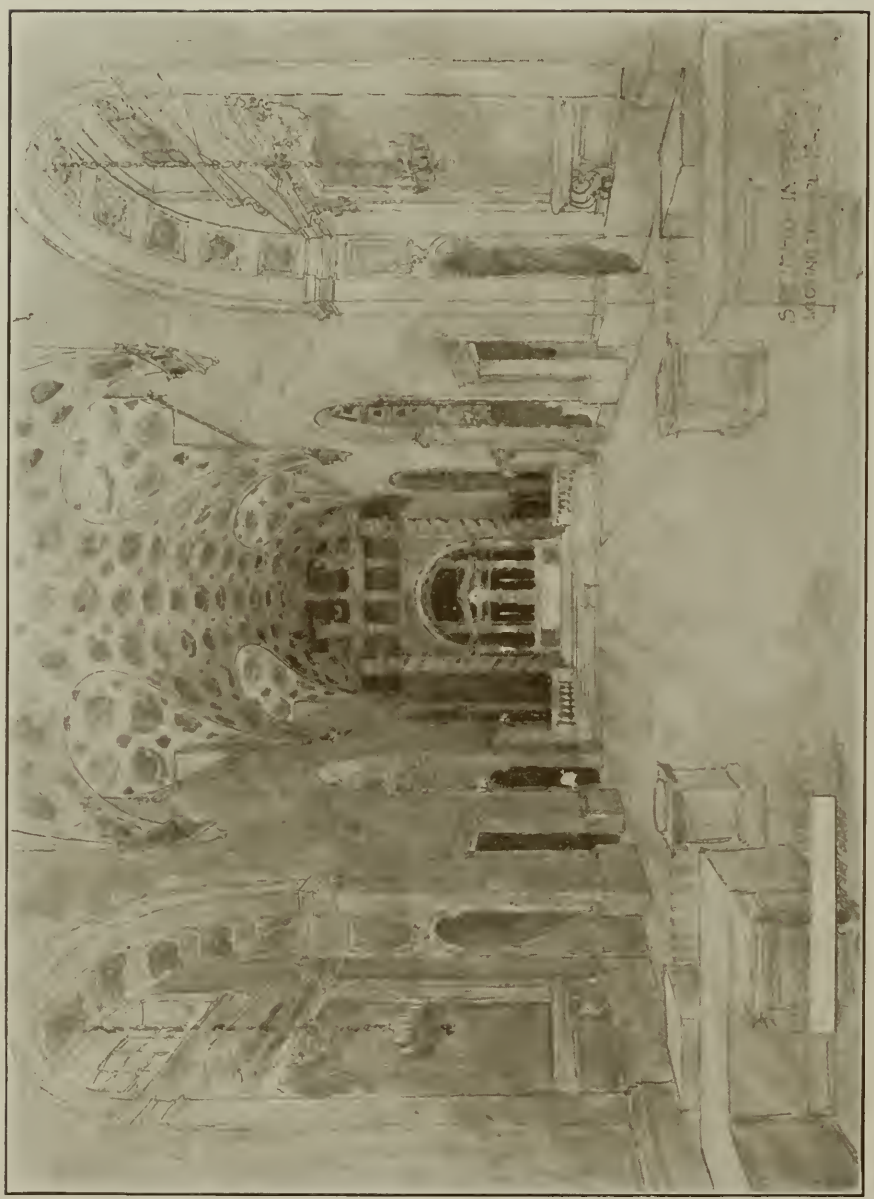
Residence of Mr. Ansel M. Easton, Easton, California — *Lewis P. Hobart, Architect*



Central M. E. Church, San Francisco. Leavenworth Street Elevation
William Curlett & Son, Architects

Interior of Residence in Oakland *Miss Julia Morgan, Architect*

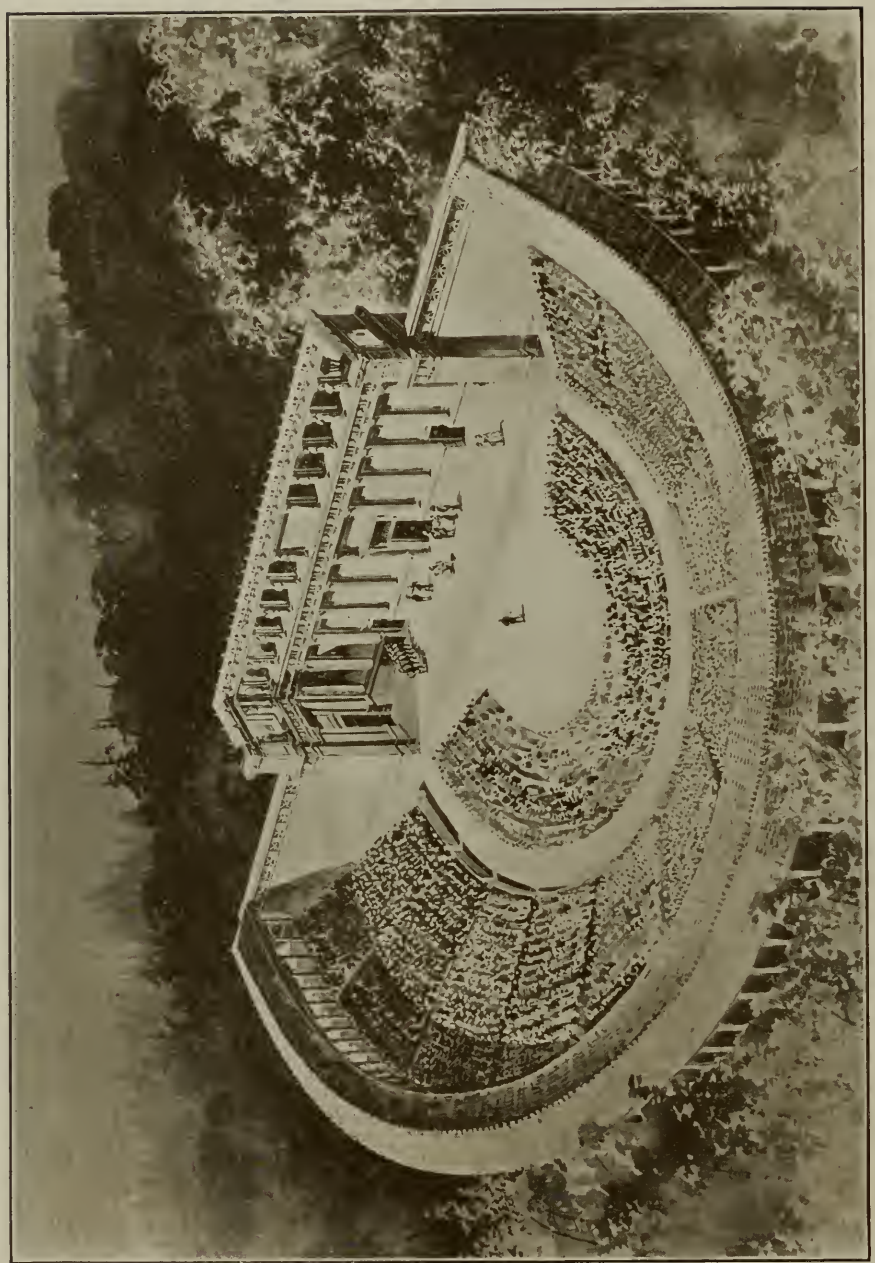
Interior of Residence in Oakland *Miss Julia Morgan, Architect*



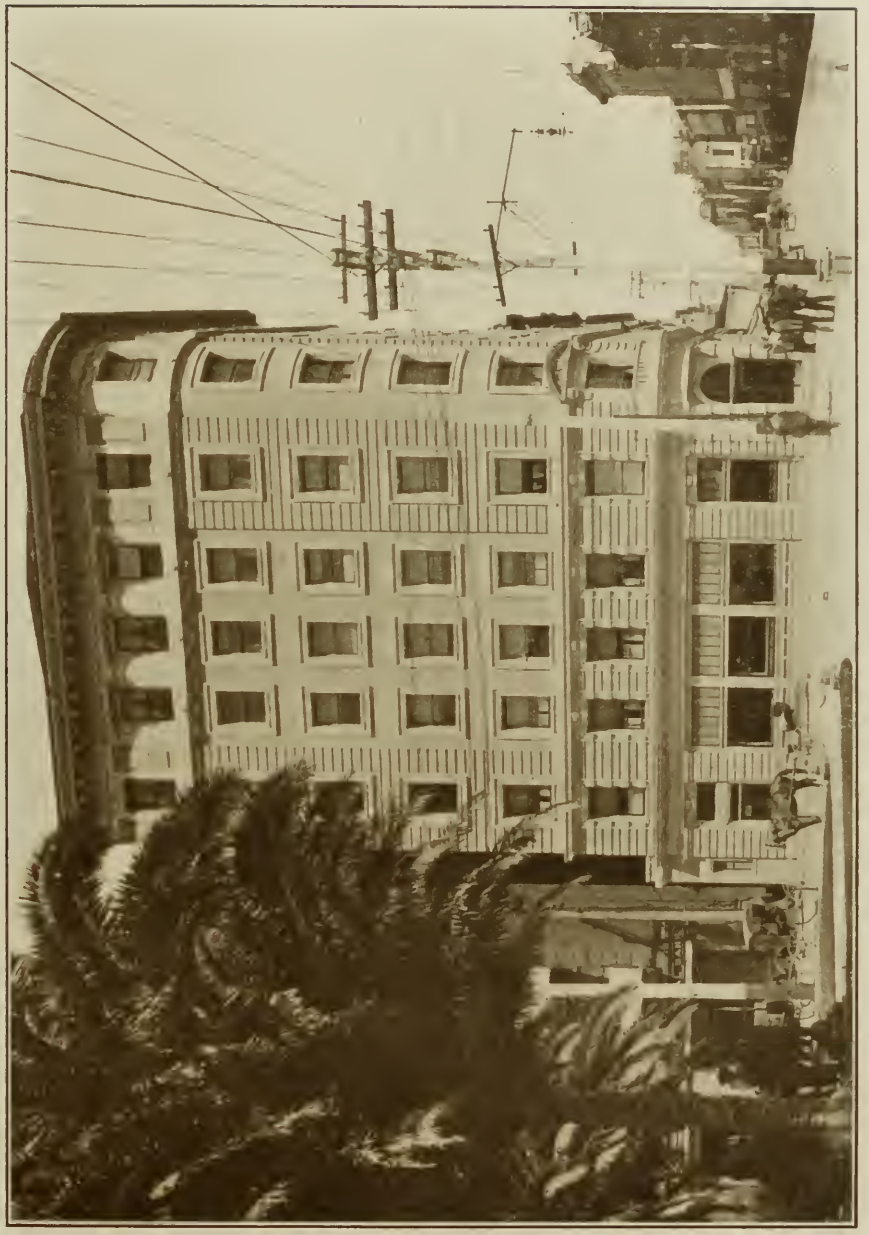
Design for Interior of a Church

Coxhead & Coxhead, Architects

Design for a Church Entrance
B. S. Hirschfeld



Greek Theatre, University of California, Berkeley, California
John Galen Howard, Architect



Stockton Savings & Loan Society Building

Meyers & Ward, Architects

Residence of Mr. E. P. Bowles, Oakland
L. B. Dutton, Architect

Thomas Day Company, Lighting Fixtures
San Francisco

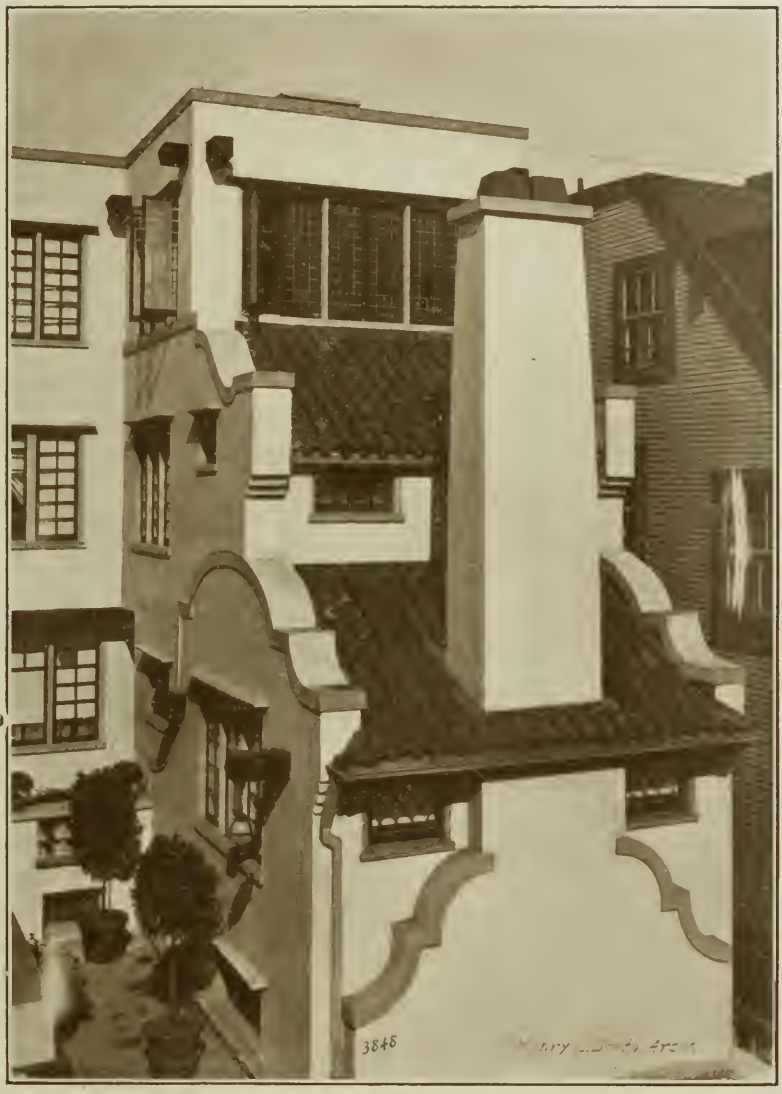
First Presbyterian Church, Sacramento Street and Van Ness Avenue, San Francisco
William C. Hayes, Architect

Christ Healing the Sick
Art Glass Window Executed by Harry R. Hopps

Sculpture by A. D. Putnam

Building for the Masonic Hall Association, San Francisco
Bliss & Faville, Architects

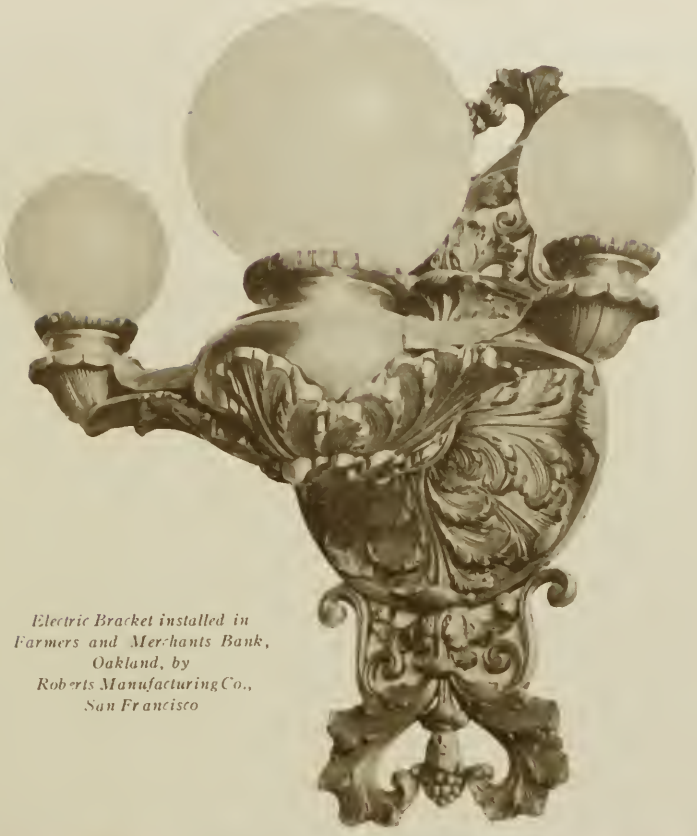
Entrance to the Argonaut Club *Sylvain Schmaittacher, Architect*



Spanish and Mission Treatment of Apartment Flats, San Francisco
Henry C. Smith, Architect

McKinley Grammar School Building, San Francisco

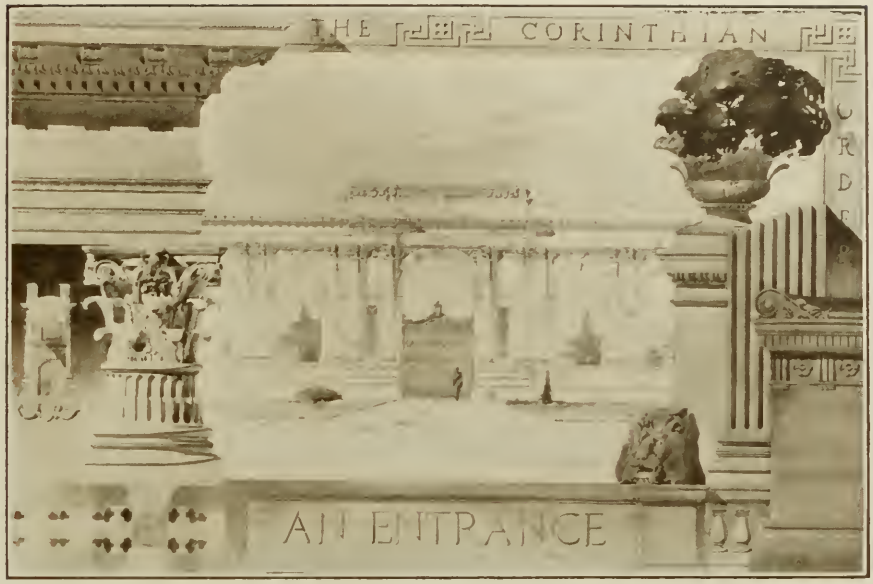
Alfred I. Coffey, Architect



Electric Bracket installed in Farmers and Merchants Bank, Oakland, by Roberts Manufacturing Co., San Francisco

Sheet Copper Marquise. Fred H. Meyer, Architect. *Forderer Cornice Works, San Francisco*

Entrance to a Court of Honor *Frederick W. Jones, S. F. A. C., Atelier*



An Entrance to a Court
F. Bearwald, Atelier, S. F. A. C.

Work of Architectural Club Atelier

By E. H. HILDEBRAND, President.

APROPOS of the exhibition and that of the work of the San Francisco Architectural Club's atelier, this occasion is, I believe, not untimely for a word of the class of work for the coming year which, through the interest taken by the older members of the profession in giving their time as instructors as well as their financial support, has shown a remarkable numerical increase. The beginning of the second year's work of the Club's atelier shows that the zeal and energy of the patrons, Messrs. G. W. Kelham and Arthur Brown, Jr., have invigorated its members with new interest.

It will doubtless be of some general interest to the public to know the way in which the design problems are worked out by the students of the Club's atelier.

At stated times all members of the design class assemble in the atelier of the Club where they work up "en loge" the preliminary study of the problem as required in the programme written by a member of the Society of Beaux Arts Architects of New York. Eight hours are allowed to develop this "esquiesse" or sketch, in which the general scheme is laid out, and at the end of this time a sketch is handed in to the massier of the atelier, a tracing being retained by the student from which he develops his final drawing with the criticisms of the patrons, Mr. Kelham and Mr. Brown, until at the end of six weeks (the usual length of time) he is prepared to transfer his drawing to white paper and render it, generally in water color. After being mounted, the drawings, in conjunction with the works of the Architectural Club of Portland, Seattle, Denver, and Los Angeles are sent to the judges and awarded mentions in the order of their merit.

Those drawings given first mention by this jury are then sent to New York for final judgment, where in conjunction with the drawings from the

A Monument in a Public Place, Dedicated to the Heroes of the War with Spain
Edward L. Frick, Del.

A Porte Cochere
Harry Michelsen, Atelier, S. F. A. C.

An Entrance
Carl D. Warnecke, Atelier, S. F. A. C.

One of a Series of Mosaic Panels Designed by H. R. Hopps and Executed by the United Glass Works

various architectural clubs and ateliers from all parts of the United States they are judged by the jury of the Society of Beaux Arts Architects. To say that during the last year this jury awarded the men of the Club's atelier mentions, speaks well for the future of the architects of San Francisco.

Between these problems are introduced from time to time small sketch problems and problems for those men who are not so far advanced.

The steel class, under the able direction of Professor Derleth of the University of California, an authority on this subject, will in the coming year continue the course in Architectural Engineering. The practical value of this course is self evident.

After the close of the exhibition the work of the life class will be resumed under the guidance of Mr. Arthur O. Johnson, twenty-five members having already signed for the class.

In order to give members a broader and more intelligent view of architecture and the spirit of the people which created it, Mr. August G. Headman will give a course of lectures on architectural history illustrated with lantern slides of the best examples of each period, supplemented by personal sketches and photographs taken in Europe.

In conjunction with the above outlined regular classes it is the intention of the Club to give a series of special lectures of "Practical Talks by Practical Men," on Building Superintendence, Heating and Ventilating, Sanitary Plumbing, and other every day problems which come to the care of the architect.

The Entertainment Committee promised many novel features for 1911 and will work to promote that good fellowship and esprit du corps for which the Club has always been known.

During the year an architectural play will be given, written by Mr. Arthur O. Johnson. Coming from the pen of this writer is good assurance of its merit and success.

San Francisco Architectural Club

Officers and Members, 1911

ERNEST H. HILDEBRAND - - - - - - - - - *President*
TOBIAS BEARWALD - - - - - - - - - - *Vice-President*
JOHN G. DRESCHER - - - - - - - - - - *Secretary*
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AUGUST G. HEADMAN - - - - - - - - - - *Director*
FREDERICK H. MEYER - - - - - - - - - - *Director*

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Pond, Irving K., Chicago.
Ward, C. R., Alaska Commercial Bldg.

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Burnett, H. E., Kenilworth Apts., Bush and Powell.
Bagley, John W. Jr., 126 Post.
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Brooke, Herbert V., 931 A, Sacramento St.
Blohme, J. Harry, Alaska Commercial Bldg.
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Bendell, Thos., 808 Schmitz Bldg, 12 Geary.
Boehme, Theo. S., 4419 19th St.
Bearwald, Tobias, 1401 Noe St.
Beuttler, John, 780 Haight St.
Brandlion, R., 1529 15th St.
Buell, Ross P., 1030 Cole St.
Baumberger, W. E., 126 Cole.
Brouchard, P., 430 B, Fillmore St.
Brown, Guy L., 1521 12th Ave., E. Oakland.
Crapo, Walter W., 714 Steiner St.
Crim, Wm. H. Jr., 425 Kearny St.
Curlett, Alex E., Phelan Bldg.
Carrick, Wm. A., 1358 Fell St.
Charlton, Alex. B., 261 Pierce St.
Chick, Edw. A., City Arch. Office.
Carroll J. Crawford, 535 Oak St.
Cohn, Louis J., 3611 Sacto St.
Collins, Allen C., 1011 Powell St.
Dakin, Clarence C., 602 First Nat. Bank Bldg.
Drescher, John G., 1781 Sanchez St.
Deuprey, Hillyer, 126 West Mission St.
Dallas, Barry J., Merced, Calif.
Dutton, L. B., Chronicle Bldg.
Dakin, Franklin W., 1147 Sanchez St.
Dressell, J. C., 1578 Sacramento St.
Estey, Barker W., 903 Phelan Bldg.
Ellison, W. H., 244 Kearny St.
Ettler, John A., 604 Mission St.
Florin, Alvin L., 3056 Blossom St., Fruitvale.
Farnkopf, Frank A., San Anselmo.
Faville, Wm. B., 1000 Balboa Bldg.
Falch, Walter C., Mill Valley, Calif.
Flawn, S. C., 1078 Jackson St.
Flanders, Edward, 141 Chattanooga St.
Frick, Edward L., 331 Octavia St.
Gailey, Daniel, 1125 Leavenworth St.
Garren, Wm., 508 Lyon St.
Gottschalk, C. E., Phelan Bldg.
Gould, Jos., 1314 Taylor St.
Helm, Wm. J. Jr., 1462 California St.
Hewetson, Angelo, 547 38th St., Oakland.
Harrison, Fred S., 278 Dolores St.
Harrison, Chandler E., 2159 Vine St., Berkeley.
Hildebrand, Ernest H., Crocker Bldg.
Hanson, Chas., 1315 Webster St. Oakland.
Horstmann, Anthony, 411 Cole.
Hirschfeld, Benj. Shuman, 1328 Hyde St.
Hilliard, Christopher, 3438 22nd St.
Haber, C. A., 1325 Merchants Exchange Bldg.
Headman, August G., Phelan Bldg.
Haupt, Oscar, Phelan Bldg.
Harcos, Stephen, P. O. Box 186.

Members of the S. F. A. C., 1911.—Continued

Joseph, Bernard, J., First Nat. Bank Bldg.
Johnson, Al. R., Humboldt Bank Bldg.
Johnson, Arthur O., 1201 Kohl Bldg.
Jones, Frederick W., 1267 1st Ave.
Johnson, C. Raymond, 51 Buena Vista Terrace.
Johnson, Franz G., 145 Fillmore St.
Jackson, W. H. 254 11th Ave.
Johnson, Frank A., 955 Carolina St.
Jorgensen, Virgel W., 740 Oakland Ave., Oakland.
Jacobs, Marc, 4036 18th St.
Knoll, A., 147 Noe St.
Keefer, Ray F., 131 Newton Ave., Oakland.
Kaleschke, Emile J., Redwood City.
Kent, Thos., care of L. B. Dutton, Chronicle Bldg.
Krogseth, L., 220 Pierce St.
Klein, Lawrence J., 222 Clayton St.
Larsen, Albert H., 430 31st Ave.
Lafranchi, Arthur A., Mechanics Bank Bldg.
Leason, H. J., 3912 23rd St.
Lofquist, John O., Bank of Italy Bldg.
Lapachet, Al. L., 1201 Kohl Bldg.
Lowenthal, A. M., 1380 Masonic Ave.
Lowe, Willis C., 749 Asbury St.
Morrison, Milton, 49 6th Ave.
McHenry, John, Jr., 2210 Ellsworth St., Berkeley.
Maloney, J. P. 4147 24th St.
McBain, Alex J., Jr., 1273 23rd Ave., East Oakland.
McNally, Fred B., 18 Belvedere St.
Meherin, Mark M., Jr., 307 Scott St.
Menbauer, Clement A., 914 Taylor Ave., Alameda.
Mullgardt, Louis C., Chronicle Bldg.
Mooser, William, Union Trust Bldg.
Michelson, H., 890 Excelsior Ave.
Monson, Russell, 1103 E. 22nd St., Oakland.
Millard, Oliver J., 575 Elizabeth St.
Moore, Wade W., 408 Duboce Ave.
Magee, Jas., San Anselmo, Cal.
Merchant, W. S., 330 Lincoln Ave., Alameda.
Meyer, Frederick H., Humboldt Bank Bldg.
McGeorge, Alex, 914 Haight St.
Moore, Wm. S., 247 Dolores St.
Nye, Harry E., 538 9th Ave.
O'Brien, Geo., Alaska Commercial Bldg.
O'Brien, Matthew, 38 Post St.
Pearson, A. W., 115 Chattanooga St.
Petersen, A. H., 1226 14th St., Oakland.
Parker, Walter, 244 Kearny St.
Polk, Willis, Merchants Exchange Bldg.
Peterson, Lewis J., 4424 23rd St.
Rixford, L. P., Mills Bldg.
Reynolds, Geo. W. Humboldt Bank Bldg.
Rally L. A., 267 32nd Ave.
Schmidlin, Martin A., 338 Locust.
St. John, Fred E., 2214 Haste St., Berkeley.
Scott, Earl B., 435 Kearny St.
Sexton, Norman W., Chronicle Bldg.
Stanton, F. H., 353 20th St.
Schroeder, Howard, 1326 Valencia St.
Stauffacher, Chas., 218 13th St.
Schrader, Otto R., 56 Waller St.
Spiedel, Paul F., 630 Ivy Ave.
Schmidts, Carl R., 1868 Vallejo.
Schroeder, A. E. 2533 California St.
Thomsen, Harry A., Jr., 1208 Devisadero St.
Thomas, Leonard H., 52B Vernon St. Oakland.
Thibault, Geo. A., 421 Castro St.
Unsin, Anton, 127 Webster St.
Williams, Albert R, 1255 Jackson St.
Walker, F. Leland, 1661 Oak St.
Wright, John A., 1508 Fell St.
Wethered, Woodworth, 814 Stanyan St.
Weihe, Ernest, 1671 Golden Gate Ave.
Warnecke, Carl, care of L. P. Rixford, Mills Bldg.
Weeks, Chas. Peter, Mutual Bank Bldg.
White, H. C., 581 66th St., Oakland
Willard, S. D., 1425 Clay St.,
Zanolini, Italo, Schmeidell Bldg.
Zecher, Emil D., 1815 Powell St.

ASSOCIATE MEMBERS.

Burke, J. J., 1210 Cole St.
Cahen, Joseph, 45 Kearny St.
Cahill, J. R., 136 Belvedere St.
Chipchase, C. G., 4105 20th St.
Derleth, Chas. Jr., 2834 Webster St., Berkeley.
Dwan, J. Edmund, 151 Tehama St.
Dwan, Jas. P., 151 Tehama St.
Davis, Jos. A., Jr., 1000 Clayton St.
Greenwood, Geo. E., 3536 17th St.
Hasty, Bert, 142 Sansome St.
Hopps, Harry R., 115 Turk St.
Jones, Frederick W., Monadnock Bldg.
Lange, Eric, Monadnock Bldg.
Pratt, Chas. F., 660 Market St.
Roesch, Carl E., Gallois Bldg.
Streshley, George L., 822 Balboa Bldg.
Scully, J. Ed., 1747 Hyde St.
Sampson, J. S., Humboldt Bank Bldg.
Waite, Geo. T., 2734 Parker St. Berkeley.
Whitney, E. M. C., Monadnock Bldg.

ARCHITECTURAL LEAGUE
OF THE
PACIFIC COAST (Official)

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Education Committee,
E. F. LAWRENCE, Portland, Ore.
DAVID J. MYERS, Seattle, Wash.
MYRON HUNT, Los Angeles, Cal.
ROBERT FARQUHAR, Los Angeles, Cal.

NOTE—The members of the Jury are also members of the Education Committee.

RESULTS OF COMPETITION WORK FOR NOVEMBER-DECEMBER

Student Work.—All mentions are credited by the Society of Beaux Arts Architects, New York. First mentions and medals must be confirmed by the New York Society before being credited by them.

Criticism by the Jury

CLASS "B" ORDER PROBLEM.

The average high order of work done by the large majority of students submitting drawings on this problem is shown by the number of mentions given. When a student has made a good design for the architectural problem, presented it and the details neatly and well, when the shadows are correctly cast and the rendering even and true, the student is entitled to a "mention." When in addition to the above he makes a pleasing composition of all the parts, the jury is only too happy to mark it "placed," and they urge students to greater effort in this particular.

The exhibition as a whole was extremely good.

CLASS "B" PLAN PROBLEM.

A great number of interesting and well-presented projects were submitted on the Program of the Garage Connected with a Gentleman's Country Estate. As the conditions were not very definitely stated, a great variety of schemes were presented.

CLASS "B" I. PROJECT (Problem in Design.)

"AN AUTOMOBILE GARAGE."

The following Pacific Coast awards were made:

Name	*Award*	*Atelier*	*City*
C. I. Harrison	Mention	Brown	San Francisco
W. Sherman	"	"	"
T. Bearwald	"	Kelham	"
E. Frick	"	"	"
T. Jones	"	"	"
L. Rosenberg	"	Portland Architectural Club	Portland, Ore.

CLASS "B" I. ANALYTIQUE (Order Problem.)

"AN ENTRANCE DRIVEWAY."

The following Pacific Coast awards were made:

Name	*Award*	*Atelier*	*City*
A. R. Williams	Mention	Brown	San Francisco
H. Michelson	"	"	"
H. E. Burnett	"	"	"
S. C. Flawn	"	"	"
C. Warnecke	"	"	"
J. W. Bagley	"	Kelham	"
A. H. Larsen	"	"	"
M. Morrison	"	"	"
R. Monson	"	"	"
G. Thibault	"	"	"
T. Bendell	"	"	"
A. Urisin	"	"	"
P. Boulanger	"	Seattle Architectural Club	Seattle, Wash.
P. C. Collins	"	Portland Architectural Club,	Portland, Ore.
A. F. Curtiss	"	" " "	"
W. G. Hathaway	"	" " "	"
B. E. Brooke	"	" " "	"
W. Helm	"	Brown	San Francisco
A. G. Hrostman	"	Kelham	"
G. Sneeringer	"	Seattle Architectural Club	Seattle, Wash.
C. K. Green	"	Portland Architectural Club.	Portland, Ore.

* * *

Is There an American Architecture?

A GROUP of architects were recently discussing the massive and conglomerate pile of masonry which Senator Clark of Montana erected on upper Fifth Avenue for residential purposes.

"Does it follow any 'order' whatever?" asked a visitor who had not seen it.

"Yes, the Tower of Babel," was the rejoinder.

Yet who knows but that the Senator had in mind the creation of a new motif in architecture—American?

There is a story told of a celebrated French architect who was asked, after a tour of this country, if he had discovered any new note in the designing of our buildings.

"Not in your buildings," he replied; "but in the Pullman sleeping car you have struck an entirely new development in architecture."

And he meant it seriously. Our sky scrapers are impressive, but not new in design, since story after story represents duplication. But in the sleeping car we have a thing all our own.

Only a year or so ago Francis H. Kimball, who designed New York's first sky-scraper in 1892—the old Manhattan Life Building—wrote:

"There is no American architecture at all, and I do not see how there can be, in the sense of a new creation. A column is a column, isn't it? A window opening can be square, circular, or pointed; you can't invent a new window opening.

"It is small wonder, then, that our cities abound in replicas of Old World architectural masterpieces, New York richer than all.

"Indeed, it is possible to find in the metropolis duplicates of some of Europe's most celebrated buildings—'swipes,' some of the architects call them."

There are, of course, hundreds of instances where American ingenuity has found its inspiration in some Old World construction, only to surpass it in the final development of the idea.

The Metropolitan Tower in New York, for instance, resembles in design the ill-fated Campanile of Venice, but so over-tops it in size and majesty that the idea of its being a copy is forgotten. So, also, the Times Building tower bears a striking similarity to Giotto's tower in Florence, yet can not be said to be a replica, except in the most remote sense.

But other instances are much more startling in their resemblance to foreign gems of architecture; and the Italian visitor to Gotham may well be pardoned a shock if he should run across Desdemona's Venetian palace transformed into a Forty-fourth street tailoring establishment, or find in the Villard houses in Madison avenue—one of which is the town house of Mr. Whitelaw Reid—a duplicate of the Cancelleria in Rome.

Even the massive new Pennsylvania Railroad Station in New York is reminiscent of the genius of past centuries, and in its high-ceiled waiting-room we find the dominant notes identical with the Basilica of Constantine, Rome.

Italy, indeed, has furnished our architects with more inspiration than any of her sister countries, although one of the most beautiful things in New York, the tower of Madison Square Garden, is a reproduction of the finest tower in all Spain—the Giralda of Seville.

That this is the work of Stanford White in no sense dims the glory of this master. The Herald Building is his, yet it is a copy, line for line, of the beautiful little town hall of Verona.

Occasionally the American's proneness to copy meets with severe condemnation at the hands of foreign architects, and in the case of the Lafayette statue in Paris, the architects were obliged to change the pedestal because it followed too faithfully the lines of the General Colleoni statue in Venice.—Collier's.

* * *

The Recent Competition for Federal Buildings

Editor the Architect and Engineer of California.

Is competition the last word in the selection of an architect, particularly for important government work? The question suggests itself in scanning the list of competitors who were recently invited to submit sketches for the three big department buildings.

Sixty architects were invited, probably among the best in the country, but we will not concede that they are the best sixty. Yet, by restricting its invitations to those sixty the government gives them a tremendous ad, a prestige that is of immense value to them, for it implies that they are the best by arbitrarily declining to look at anything that any one else might present. Incidentally, it would be interesting to know by what process these names really were selected.

Some of the invited have done notable work, but, offhand—and we keep fairly good tab on what is being done architecturally—it is hard to recall anything very extraordinary that has been done by, let us say, twenty of the sixty. Why were those twenty invited? Surely not political pull; neither could it have been any geographical allotment, for twenty-nine New York firms as against three from Chicago, three from Washington and three from Philadelphia surely does not tally with a population pro rata. These buildings are for the whole country, they are so peculiarly national in character that a geographical allotment might have been made and with considerable reason. As it is, we have the spectacle of the government's officially proclaiming that there is nine times more art, more ability, in New York than there is in Chicago, whose allotment is the same as Washington's and Philadelphia's.

If government work is not to be designed by its own corps of designers—who, by the way, in the last few years have turned out a lot of work equal to anything that has been done by private architects, and in a great number of cases infinitely superior to the great bulk of the private work—and since the President or the Secretary of the Treasury can't very well turn that work over to some relative or friend, as is awarded most of the private work, and that a competition—as unsatisfactory as that mode of selection always proves itself to be—is the only thing the fertile architectural imagination of our progressive times has been able to evolve, then it would seem to us that an "open competition" is the only really fair thing the government can sanction.

Call for as little expensive work as practicable, simply sketch suggestions, but let them come from any one and from everywhere. Surely the judges will be of such calibre as to be able, with little effort, to separate the wheat from the chaff. And it is possible that a genius may be discovered. When the very best and most appropriate designs are selected, then let there be an examination of personality, so to speak. If the men are responsible, have done good work, have clean records, why by all means give them the commissions.

This special and exclusive invitation scheme smacks much of an aristocracy in matters architectural, a privileged class, altogether too much so in work that is for all the people and paid for by all the people.

FAIRPLAY & CO, ARCHITECTS.

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Hardwood Lumber Situation Growing Serious

By J. H. DIECKMANN.

APROPOS of the "Conservation" talk now sweeping our country, we believe it is time for all publications devoted to building or kindred industries where hardwoods are used, to give some of their valuable space to the diffusion of more knowledge amongst our people regarding the condition, present and future, of the hardwood supply in the United States.

It is not generally known that our hardwood forests are quickly being depleted by the ax of the lumberman and our annual summer forest fires. The first cuts for the market and according to the demand; which latter, by the way, is now and has been for some time only for first class product. In supplying this demand the lumberman has to waste either by burning or abandoning on the ground, about 42% of the timber which reaches his saws. He cuts all he can and markets his product as he goes along, thinking only of the present and the profit he gets today and letting the future take care of itself. Not much remedy can be offered to this element of destruction, except perhaps that the Federal Government should reserve as much of our timber lands as possible but allowing each year a certain amount of timber to be cut under restrictions as to sizes, replacing of the cut trees by new saplings, and we may also try to assist the lumberman to dispose of the second class product he is now throwing away by creating a market for it. A great deal could be accomplished in this way.

Now as to the forest fires which destroyed last year approximately $240,000,000 worth of timber. Can nothing be done by our Forestry Department to protect us against this wanton destruction? Would it not be a great investment to ask Congress for a good appropriation of funds to be devoted exclusively to the proper patrol and protection of our forests? Such protection would probably save $200,000,000 per year of our National resources, and at the same time prolong our hardwood timber supply.

The Relation of Commercial Inspection To Municipalities

By EMORY E. SMITH*

IN the course of recent commercial evolution, the relation between buyer and seller, and employer and employe has materially changed, presenting new problems which have to be met practically.

Great advancement has also been made in technical matters, making it possible for specially trained men to be of much greater and more direct service to large or combined interests than hitherto.

A demand is now being made for definite knowledge regarding construction materials, power plants, industrial equipments, supplies, etc. The demand is for known quality and given specifications, so that the greatest energy and service can be exacted at the least cost.

In the matter of supplies, if it is iron pipe to be purchased, it must now be of a given analysis, weight, hydraulic test and physical perfection; if it is petroleum for fuel, it is the amount of heat unites or steam producing value which it contains; if it is structural steel, it is rigid inspection and analysis in the mill and the same rigid inspection in the shops before it is shipped; if it is cement, it is rigid inspection, and its crushing value with the aggregate in concrete, per square inch, that is wanted; if it is a pumping system, it is the actual capacity by test, and the amount of lost energy by slippage, etc.

The ideal municipality, outside of moral and esthetic considerations, is the one promoting harmony and getting the greatest, best and most practical results for the people's money, and the trend is toward conducting a municipality on much the same lines as those upon which large business houses and corporations are conducted.

The demand being made for exact knowledge regarding materials has brought into existence the American Society for Testing Materials, and the International Society for Testing Materials, and many technical institutions for standardizing of special materials and the establishing of uniform standards and specifications.

The U. S. Government, practically all railroad companies and large corporations, and industrial establishments have adopted or are adopting rigid specifications for the materials which they use, and the inspection of the materials and the interpretation of the specifications has been, and is being entrusted largely to the commercial inspection establishments, which have been brought into existence through this modern demand for impartiality and exactness in business.

These inspection companies have systematized their business and have concentrated under their control large numbers of specially equipped and trained men, and have installed at central points expensive equipments for the purpose of properly rendering the service demanded. The inspecting engineers are stationed throughout the country, wherever there are any large centers of industry, such as pipe works, rolling mills, foundries, cement mills, creosoting works, etc.

Our Company will shortly have $100,000 invested in central laboratories and inspection equipment at San Francisco and Los Angeles. I mention this as an indication of the progress made in the inspection and testing business.

The cities, towns and counties of California are beginning to realize the great advantage of having expert commercial assistance, just as the

*Senior member of Smith, Emery & Co., of San Francisco and Los Angeles. Read before the League of California Municipalities, at San Diego, November 18th, 1910.

Government, the railroad companies and large corporations have earlier realized it, and so it has come about that City Boards of Trustees, Boards of Public Works, City Engineers and County Engineers find it not only convenient and economical, but essential to the public welfare to bring to their assistance commercial inspecting and testing, thus securing the same advantages as those enjoyed by other large interests.

Many of the larger railroad systems, greater corporate interests and cities of large size have in operation laboratories of their own for the performance of minor work but they thoroughly understand the advantage of commercial inspection and like the U. S. Government employ such firms on most large and important work.

About two-thirds of the steel at the large rolling mills and shops is passed upon by commercial inspectors. The other third and a considerable portion of the rejected metal goes to people who do not believe in inspection, or who are neglectful of their own best interests.

In cast iron water pipe, our rejections at the foundries at the present time are somewhere in the neighborhood of 16%. Somebody gets the uninspected pipe, which always contains a considerable percentage of misshapen, under or over weight material, or lengths containing flaws.

Cement mills at times make defective products just as any other manufacturers do, but no one has ever seen any cement thrown away at the mills. Somebody gets the uninspected cement and that which has been rejected by the commercial inspectors.

The Government and all large capitalized interests constantly exercise the greatest care to see that they get only the best inspected materials. It seems reasonable that the authorities of all cities, towns and counties should exercise the same wise forethought, and the same care in the expenditure of public moneys.

As already stated, there is in evidence a strong tendency to run municipal affairs on strict business principles, and commercial inspection opens the way to the elimination of embarrassing favoritism in contracting for materials and accepting work and insures full value for public moneys expended; it also eliminates disputes, public dissatisfactions and lawsuits.

The cost of the performance of this class of expert service under the present advanced methods of conducting such establishments is so small that it is lost sight of entirely in the large resulting benefits.

* * *

A Colossal Concrete Statue

What may become one of the most famous statues in the world stands above Eagle's Nest, across the river from Oregon, Ill. It has been in process of making three years and is now near completion. It is constructed of concrete. The Indian figure, which is forty-eight feet high, stands facing the south, looking down the river. The head and profile and folded arms appear perfect in detail as they are outlined against the sky and forest from many viewpoints around the country.

The claim of the statue to fame lies in three things: (1) Any one may read its message; (2) the statue's great size, forty-eight feet, without counting either the artificial base or the natural rock foundation 250 feet high on which it is placed, puts it on a scale with the Goddess of Liberty in New York harbor and the great statue of "The Pilgrim," on the New England coast; and (3) the greatest claim to fame is that it is built to be permanent.

The City Beautiful

By F. W. FITZPATRICK

[*Failure to follow the Burnham plans for the beautification of the new San Francisco does not mean that the city has entirely ignored the idea of beauty development. Members of San Francisco Chapter of the American Institute of Architects have inaugurated a movement that promises to accomplish important results. They have recommended the appointment by the city administration of a commission whose chief duties shall be to encourage and work for general harmony of all civic and city improvements planned by the various clubs, and federal, state and city organizations. Unquestionably great benefit would come from a combined effort of this character, and it is hoped the city authorities will take kindly to the suggestion and appoint a commission capable of carrying out the Chapter's ideas.*—Ed.]

HOPEFUL signs are everywhere seen of an awakening of our cities to the fact that, even as great commercial or even manufacturing centers, they need not necessarily be ugly. Municipal societies are bending every effort toward beautifying the existing cities and toward the sane planning of additions and growths thereto, and few cities are there now where some club, or board of trade, or other body of representative citizens has not made a comprehensive plan for a civic-center, the widening of certain streets, the creation or reclamation of certain parks and boulevards. In some cities huge sums have already been expended in the work of building up to such a plan. It is a good investment. Our railroads appreciate that and are no longer stingy in providing beautiful stations and surrounding them with parking, handsome approaches, fountains and what not. The city governments themselves realize that doing things properly, paying some attention to the aesthetic as well as the more essentially practical end of municipal work and "improvements" is sound policy and meets with the favor of the people. Paris has spent millions lavishly to virtually replan and rebuild itself and with such great advantages to its own interests, and such profit to the property owners, that it is beginning another period of artistic "Renaissance" that will involve the city's expenditure of over $100,000,000. Our cities have seen all that and, though a bit timidly, are doing something; some more, but all a little, in the same direction.

Now, strange as it may seem, the real obstructionists in this movement are the architects. It is a bit paradoxical, too, for the movement was seconded if not started by them, they preach it the loudest, you'll find them in the van, probably chairmen and presidents of those very societies or clubs that are making the greatest headway. And, worst of all, they don't seem to know or realize that they are such arch-offenders. And it all springs from an overdose of the ego. Each architect wants to do something individual, characteristic; he cannot and will not merge himself into and for the benefit of the whole, the common good.

Of what use is it to plant beautiful, wide streets, keeping all the wires underground, prohibiting unseemly signs, and all that sort of thing if the buildings lining those streets are at daggers' points to each other? A city is, after all, but an aggregation of buildings;; without them there is no city; and whatever its plan, however gorgeous its parks and noble its streets, its buildings are its chiefest feature, and it is beautiful or ugly exactly as are its buildings. Taken individually, many of our latest buildings in every city are beautiful, as isolated units they are well designed, but not the slightest effect has been made to blend them into the surroundings, no consideration has been given the city, the ensemble. True, most of our cities are suffering from an inheritance of appalling freaks and "impossible" build-

ings, bequeathed from former generations; nevertheless, the suggestion of a Denver editor is pretty pat that "every architect should be placed under bonds to keep the peace between buildings." That so many of our existing structures are monstrosities should be but an added incentive, the task being that much harder, to our architects to so build all about them as to minimize rather than accentuate their ugliness, to adopt tones and colors in the newer buildings that will at least not scream at each other or the old ones and to so plan the new, generally much taller buildings, too, that they may divert attention from the old without challenging unfavorable criticism themselves.

All this is possible, but, strange as it may seem, you may preach it to the architects until doomsday and never get them to budge one inch. You have to compel, force them into it. So with fire-preventive construction, with sanitary plumbing, with sensible heights of buildings—compulsion was our only salvation. We might have waited twenty years for the architects to do safe building of their own volition and then counted those who would do it on the fingers of one hand; by making strict building laws forbidding anything but fire-resisting buildings in certain districts we have secured the desired end in less than five. In some European cities building restrictions are such that a cornice line, the height of buildings, is maintained for blocks, whole streets, colors must be uniform, in fact so much regulation is the order that beauty (the aim of it all) is overstepped and almost dismal monotony is the rule. I do not suggest such ultra-regulations, but we should have something to keep things a wee bit more in consonance than they now are.

Some, the hypercritical, will again sling "paternalism" and start up declaiming some spread-eagle talk about "individual rights," etc., for there has been opposition to every move made for the improvement of our cities. Less than thirty years ago one of the loudest howls I ever heard went up when cities began to build the sidewalks and charge the property with the cost. The good citizens wanted to retain the right to make them of wood, of stone, of brick, of anything they thought best and at any level so that you were going up and down steps and ever walked with greatest danger of your own neck and other portions of your anatomy. "Liberty" and "rights," nonsense!

What I do clamor for is just a start at a beautiful city by compulsion. Let us begin with only the more important buildings, say those costing over $50,000 at first. Let it be part of the building department's duty to examine those plans not alone to see if lot lines are preserved, the proper materials for safety specified, the thickness of walls correct and all that, but further that that building will not too riotously clash with the others in the same block. Not necessarily must the color be the same as that of the other buildings, but a certain harmony must be preserved, a style that may differ but yet blends in, a higher or a lower structure, but with some lines bound in with its neighbors. In other words, something to compel that those buildings be designated as part of a whole and not an isolated, absolutely independent unit. What I've been trying to get at is to remove the curse of the "twenty-five feet" idea. Go along our streets and the impression you'll get of each block is of a huge plate of cake, not one, nice, well-iced cake, but a sort of "Washington pie" affair made up of slices of wedding, pound, sponge, raisin, every imaginable cake, all sizes and conditions, jumbled together, each piece good in itself, but the whole an unappetizing mess.

"A pretty big duty to saddle upon the building department," say you. Granted, but in nearly every city there's a chapter of the Architects' Institute or some architects' club. Let the city invite that association to appoint

a committee, say five of its most able men to assist the building department. As individuals, architects will kick up all sorts of shines and try to outwit the building department, but once make them a part of that department, give them an official status and official obligations and they'll turn things upside down to keep the other fellows and each other well within bounds, toeing the line. It's a queer trait, but human.

Even if the building department can but suggest and not order that this or that be done to conform to a general scheme, an entire effect, it will bear good fruit, so good that the authority will soon be enlarged and made to apply to all buildings of whatever cost. My contention has always been that the true province of a building department was not only to direct the practical, the safe construction of all buildings, but also to thoroughly censor the design. We legislate against dangerous things, we forbid certain manufactories within a city, we bar certain smells, unnecessary noises, why limit our authority to the prevention of offenses against our noses and our ears? Surely our eyes deserve some consideration, too: The "opposition" will add that it would be a shame to have an ex-builder or plumber or carpenter paw over their plans and direct changes in their designs. If the caliber of the building department is not high whose fault is it? Raise the pay, raise the requirements so that a real architect may be secured for that job, and then give him an "advisory committee" and skilled help. Don't abuse the principle of a thing because its application has been or may be in poor hands. Stick to the principle and see to it that it is properly applied then growl if it doesn't work right.

* * *

Sewer Pipe-Concrete vs. Vitrified Clay

By W. E. DENNISON, in Pacific Municipalities.

HAVING been asked to say something about sewer pipe and the materials of which it should be made, it is proper at the beginning to say for the benefit of your readers that I am engaged in the manufacture of vitrified clay pipe. It must be left to their judgment, therefore, whether or not I am unreasonably prejudiced. I am also connected with interests engaged in concrete construction. In all work coming under my personal control I use concrete wherever it seems best. I have had twelve years' experience in the manufacture of vitrified clay pipe and twenty-five years in concrete construction. For the purposes of this article, which shall be a very brief and simple consideration of the question as to which is preferable for sewers, concrete pipe or vitrified clay pipe, two definitions are necessary.

Concrete is a compound of gravel or broken rock and sand, united by means of hydraulic cement.

Any substance to be **vitrified** must be converted wholly or externally into glass or a glassy substance.

Concrete is strong or weak according to the amount of cement used and the manner of mixing the compound. After concrete has been made few can tell whether it is fit for the particular purpose or not. Time alone can find a true verdict. A concrete which is acceptable in foundations and walls in earth or in water or exposed wholly to the weather may be unfit where exposed to fire or acids. We do not think of baffling fire with concrete, but with bricks of highly refractory clay burned in the hottest fires.

Acid manufacturers do not use vessels of concrete in their processes. On the contrary their pipes and vessels, made to withstand the corrosive effects of acids and acid fumes, are almost invariably of glass or vitrified clay.

Sewage being composed of every waste capable of being carried off in solution contains acids not only of decomposition but the chemical refuse of the trades. The pipes carrying off this waste must be acid resistant in the highest degree. Consequently sanitary engineers reject wood and iron for sewers because both soon yield to decay due to acid reaction. Acid manufacturers test their pipes, jars and retorts by boiling fragments of their composition in the strongest nitric acid for days at a time. They find that thoroughly vitrified clay products stand this severest of tests and accordingly order their containers to be made of vitrified clay. You will not find them using cement pipes.

For similar reasons sanitary engineers the world over use vitrified clay sewer pipe because long experience has shown that it is perfectly adapted to the most exacting requirements.

It is true that some engineers have allowed their enthusiasm for concrete, on account of its extreme convenience and the simplicity of its manufacture, to persuade them into recommending its employment in the form of pipes for carrying off sewage. Articles and pamphlets almost innumerable have been devoted to recounting the failure of concrete so used.

Vitrified clay pipe has no need of defense if sound reason and experience are allowed to prevail. Its defects are discernible to the simplest mind and are immediately discoverable on the job. Invoke the rule of rejections on the work and all defective pieces are immediately thrown out.

The engineer or inspector has not yet been produced who can tell whether or not his concrete pipe will outlive the term of the bonds sold to pay for the work.

In all work, whether public or private, the greatest economy is obtained by securing permanent results.

We know what vitrified clay pipe has done for the permanent sanitation of the world's communities.

We shall have to wait many more years to find that this office can be performed safely by cement concrete pipe.

Concrete has its own places of usefulness and should be kept there. It is my sincere conviction, based upon observation and experience, that concrete pipe has no place in a permanent sewer.

* * *

Ten Best Buildings

Which are the ten most beautiful buildings in the United States? A recent voting contest in the East, of architects and architectural students gave this list: The Capitol and the Congressional Library in Washingon; the Public Library and Trinity Church in Boston; Columbia Library, Trinity Church, St. Patrick's Cathedral, the City Hall and Madison Square Garden in New York and the Vanderbilt residence, "Biltmore," in North Carolina.

All of these buildings are in the East. Three of them are libraries and three are churches. One capitol, one city hall, one place of amusement and one residence complete the list. Not a single State capitol, or theater or gallery of art, or monumental museum has a place.

It is hardly likely that the vote taken in the contest was fully representative of the country. It is an Eastern judgment expressed by architects and the favor appears to have run to grandiose rather than to beautiful buildings. A Western vote, or a vote of artists or of amateurs, would doubtless have given a different verdict in several cases.

Design for King George Hotel, Vancouver, B. C.

Wright, Rushforth & Cahill, Architects

Municipal City Hall, San Francisco *Wright, Rushforth & Cahill, Architects*

A Seven Story City Hall for San Francisco

The accompanying illustration shows the Market street front of the structure which is to be erected by Mr. James Otis, trustee, on the south side of Market street near Eighth, San Francisco, and which is to be used temporarily as a City Hall. It is to be of reinforced concrete with a frontage on Market street of 200 feet, depth 165 feet, and height above the sidewalk of 102 feet. It will contain seven stories and basement, and will cost approximately $600,000.

The building is so planned that it may be eventually used as a first-class hotel, but for the present the interior arrangements have been specially designed for the accommodation of the various City departments which are to occupy the building when completed.

On the ground floor will be housed the County Clerk, Tax Collector and Assessor. The second floor will contain offices for the Board of Supervisors, Fire Commissioners and Board of Education. The third floor will provide for the official offices of the Mayor and his Secretary; the Civil Service Commission, Sheriff and Grand Jury. On the fourth floor are placed the Justices Courts, City Attorney and Law Library, and the fifth floor will be devoted entirely to the Superior Courts, Judges Chambers, etc. The sixth floor will be given over to the Board of Public Works and the Board of Health, and the entire seventh floor will be occupied by the Bureaus of Architecture and Engineering.

The building will be provided with four rapid running elevators, vacuum cleaning plant, messenger and fire alarm service, heating plant, etc.

The main rear light courts are 24 feet, 6 inches wide and entirely open on the south side, thus affording exceptional advantages in the important matters of direct sunshine and light.

To the rear of the main building will be placed the Central Emergency hospital on one side, and the stables and garage on the other. The intervening space, about 10,000 square feet, between the three buildings will be parked and laid out with shrubbery, flower beds, etc.

The architects are Messrs. Wright, Rushforth & Cahill of San Francisco.

Polychrome Terra Cotta

THE use of artificially colored terra cotta has developed with a rapidity little short of startling. Fortunately the more important work has usually fallen into the hands of well known architects who have been able to develop it with discretion; though their efforts are not always entirely free from that tendency toward extravagance which usually attends the introduction of new methods or materials.

On the whole, one is justified in saying that discretion has been used. This is the more necessary because the innate tendency of men is usually toward bright color until the restraining influence of a trained judgment is felt, and especially so in more northerly climes where veiled half-tones are better suited to our more clouded skies, with their diffused lights, which bring out all those nuances and subtle values which sunlight kills.

Polychrome architecture, therefore, requires the nicest judgment with an ample background of experience as it is difficult to foresee the effect of new colors and combinations and the modifications due to varying distances from the eye and heights above the ground.

The inclination to use gray as a basic tone, enlivened with green and old gold, is one of the more recent developments. Churchill's restaurant, Broadway and Forty-ninth street, New York (Herbert M. Baer, architect), is a good example. Gray actually predominates in surface extent but is insignificant by contrast with the more lively colors. It serves the purpose of differentiating the architectural features from each other and yet binds them together. The spandrel panels are of green tile, the modeled architrave is decorated in old gold and green, and these colors are repeated in the cornice. The parapet and ornamental pediment are of light gray terra cotta.

Undoubtedly polychrome terra cotta has come to stay, and now that the experimental stage is over, and the need of excessive caution passed, its development seems likely to be rapid. The architect can use color in a medium that lends itself easily to modeling—and color and form go naturally together. Moreover, terra cotta colors do not fade, are easily cleaned, and the material is absolutely fireproof and will last indefinitely.

The desirability of well arranged color in our every-day life cannot be overestimated. Aside from its artistic influence, scientists have many times, and we believe successfully contended, that temperament is largely influenced by the dominating color of our environment.

The man who has traveled abroad, and is familiar with the lavish use of color that prevails, particularly in Southern Europe, knows how important a part it plays in those countries of brilliant sunlight. How much more, then, is it to be desired that in this country, where we have long periods of lowering skies, that in our walks about the street we should be greeted with something better than the monotony of brick and stone that now confronts us. It is here the architect has his opportunity, keeping in mind as stated at the outset, that he should endeavor to avoid the glaring intensities of the primary colors, and use, with artistic judgment, the secondary and more subdued tones.

* * *

A Fairy Tale

Little Lola—Is the house that Jack built a fairy tale, papa?
Papa—Yes, dear.
Little Lola—Why is it a fairy tale?
Papa—Because it didn't cost any more than the architect's estimate.

Elements of Rental Values of Office Buildings

AN interesting paper on "Comparative Rentals of Office Buildings" was read by Mr. F. H. Heywood, of Columbus, Ohio, at the recent national convention of building owners and managers in Washington. The following paragraphs will be found of interest:

The several items which go to justify differences in rates in different parts of the same building may be set down as follows:

First. The advantage of advertising upon the windows commanding a view of the principal street or streets. Though this is different in different cities and in different locations within the same city, yet instances may be noted where a corner room with windows facing two prominent streets and upon the second floor will rent for 40 per cent more money than the same sized room at the same corner upon the sixth floor, and 130 per cent more than the average of the building, 300 per cent more than the low rate in the building, 177 per cent more than the same room on the third floor, and 25 per cent more than the same room on the fourth floor. Again this room commands 17 per cent more than the one adjoining it upon the principal street and 25 per cent more than the room adjoining it upon the side street. The manager of the building under consideration, tells me he has no trouble in getting from 50 to 100 per cent more rent for rooms which offer advantages for advertising the tenant's business, either by having windows facing principal streets or entrance doors facing the elevators.

Second. Units or rooms with entrance convenient to elevators, or with the entrance directly facing the length of the corridor, in some buildings have added value.

Third. **View and quiet.**—The upper floor units nearly always command a higher rental, in some instances as much higher than the middle floor, as the advantages of advertising on the second and third floor are greater than on the middle floor. There is everywhere a class of tenants willing to pay for the view obtained from their office windows and for the quiet obtained by height above the noisy streets.

Fourth. **Natural light.**—In the West particular attention has been given to an effort to obtain natural light to each unit and as a result large areas have been devoted to light courts. Whether or not this pays is difficult to determine. I have at times been inclined to doubt it. You can nearly always find some tenants who are easily satisfied with artificial light if they can get a lower rental rate, and if you make your own current you can afford to simply figure fuel cost, when comparing extra cost of lighting these dark rooms with what you can get for them. Of course additional cost of construction and service must also be figured. But take a room on a light court with the view obstructed as it must be and very little if any natural light. At the bottom of the shaft you can get practically no more rent for it, because it has windows opening upon the court, than you could if it simply had good ventilation, which can be had without the windows, and you have lost the space upon valuable ground for many floors in a court which might be yielding an additional income. The rental rate procurable from office space facing light courts varies, of course, with the amount of natural light therefrom to be obtained, as well as with size and depth of the court. In nearly every instance I have examined even above the adjoining buildings, where the light is wholly unobstructed, the rental rate is 10 per cent below the same space facing a street. And this same

rate seems to follow on downward 10 per cent off of each floor above for each floor below it, after you pass down from the top of the well.

Fifth. **The direction from which light comes.**—Here there is a great diversity of opinion and it is doubtful if this has any effect upon rates, though it may have its effect upon securing certain classes of tenants. As a rule light from the west seems to be the least desirable. Architects, doctors, dentists, some lawyers, and most office tenants, who devote much time to work requiring absence of shadows and close eye application, prefer north or east light. The south lighted unit always rents well, though it has not much of a lead over the north and east. All this is irrespective of view or other considerations. And so we come to the effect which elegance of structure has upon rates. And you know, and I know, it does affect rates and sometimes very seriously. In many instances it has a greater tendency to reduce the rates of competitive buildings less elegant and built for revenue than to increase them for the elegant building itself. Not that I would for a moment decry all that is fine and great and beautiful in the architecture of our modern office buildings, but you and I, Mr. Manager, are expected to and are desirous of making good returns to the owner upon the value of his investment.

And then we have the **big** building with its tower reaching almost above the clouds where you may have an office on the forty-eighth or sixty-second floor, nearly a fifth of a mile above the seat in your automobile at its front gate, the one which consumed 860,000 days of labor to construct, enough to keep one man busy 2,360 years, built to advertise the business of some great corporation, such as the Metropolitan Building, the Singer Building and others. Nearly every city has one of these advertising structures and they **do** advertise their owners' business as well as the business of tenants who occupy them. Try it out and see. Go to Europe, for instance, you may have to explain to some native there that San Francisco is not in the suburbs of Philadelphia, or that Roosevelt is no longer king of the Irish in America, but if you tell him you have an office in the Metropolitan or Singer Buildings he will know at once you are from New York.

* * *

New Houses Built of Old Material

IT IS perhaps not generally recognized by the average reader that new buildings constructed of old or second-hand materials are considered in many respects just as good, if not better, than those constructed wholly of new materials. In all cases the prices for second-hand building materials are considerably below the level of the new, thus permitting of a great saving in the building of a house, while, coupled with this, the owner has the satisfaction of knowing that his house is even more substantial than it would have been had he purchased new materials throughout. In discussing this particular feature of construction, a large dealer in second-hand building materials in Greater New York expressed himself as failing to understand why any one intending to build a house ever purchased new material. "After a house is built," he said, "there is nothing to show that second-hand material has been used, except the bank account of the owner. The house itself will outlast the ordinary house of new material.

"The principal trouble in using new materials is caused by the lumber. In these days of airships and two-mile-a-minute autos we won't wait for lumber to become thoroughly seasoned. Take the ordinary beam that is used in a new house. It is still oozing sap. In the course of a few years

it will shrink half an inch in length or it will become warped. As a result great cracks open in ceilings and in floors. Ceilings fall from this cause, doors stick and windows rattle, all because the wood was too fresh.

"Comparing prices, you will see how money may be saved. Second-hand brick is sold at, approximately, 25 per cent lower than new brick. This in spite of the handling, for every second-hand brick must be cleansed of the mortar. A brownstone stoop which would cost you $200 to buy new I can sell for $100. It will be just as good as new, too, and none would be able to say from its appearance that it was not.

"On beams, the builder can save a third despite the fact that the second-hand are far better than the new."

The speaker went on to say that the demand for the big beams particularly far exceeded the supply. When the old Stock Exchange was torn down in Broad street some years ago the beams were used in the erection of a Fifth avenue mansion.

"They say the only part of a pig the packer can't use is the squeal," he continued. "The same is true of an old building. The only part there is no demand for is the plaster. We leave that on the ground for the diggers to cart away. The sashes, doors, casings, stairs, banisters, fireplaces, mantels, even the laths, are all fish for our net, as are the piping, bath room fixtures, basins, tubs, chandeliers, etc.

"Second-hand sashes, that are as good as new, you can buy for less than it would cost to put glass in new ones. I'll sell you a bath room outfit for one-half what you'd pay for new material, while a door that would cost $10 new can be bought for $3.

"Of course it makes some difference how far the material has to be shipped. If you are building in Maine you can't build so cheaply as you can on Long Island, using the same material. A very well-known and very wealthy New Yorker has just built a bungalow in Maine from material shipped from here. Every stick used in it is old, but none would ever guess it. For $250 I'll sell you a complete bungalow. You can have it built for less than $100, and you'll have a place that would have cost you up to $1,000 to build of new material."

The removal of skyscrapers has already begun, and this has resulted in the appearance of second-hand steel. The prices on this class of material are 15 to 20 per cent lower than the new, following the fluctuations of the new in the open market. Old steel and iron always have a price as junk and the difference between the value as junk and as building material represents little more than the cost of manufacture.

Fireplaces from old farm houses also are in demand, and when a century-old house is torn down the open fireplace invariably is preserved to decorate some wealthy man's home. The supply of these is far less than the demand. Old oak for panels and old-fashioned Dutch doors in two pieces also are sure of a ready market at all times.

* * *

For Better Types of Schoolhouses on Pacific Coast

The Architectural Club of Portland, Ore., working with the Civic Council, is preparing data furnished by Mr. J. A. Curry with reference to schoolhouse construction throughout the United States, in an effort to secure the construction of safer school buildings. It has been discovered that some of our Coast schoolhouses are not built with that wise regard to their fireproof condition which the Architectural Club naturally considers important, and the present movement is toward not only safer construction but a higher class architecturally.

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(ORGANIZED 1857)

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Form Partnership

Announcement is made in Los Angeles of the formation of a partnership between Architects John P. Krempel and Walter E. Erkes, the latter for several years in charge of Mr. Krempel's office work and during the past year also building up a clientele of his own. The work of the office will hereafter be done under the two names as associated architects.

New Architects

The California State Board of Architecture for the Southern District, has granted certificates to practice architecture to Charles Saxe, 1045 Ingraham street, and Robert M. Taylor, both of Los Angeles, and to Lionel C. Sherwood, University Club, San Diego.

Official Report on German House Competition

Editor The Architect and Engineer,
San Francisco:

The following is the result of the German House Association competition for a home to be built at Turk and Polk streets, San Francisco. (Lot 137 ft. x 137 ft.; cost $200,000.)

The original competitors were:

Henry H. Meyers. Fredk. H. Meyer.
H. Guilfuss & Son J. W. Dolliver.
Philip Schwerdt. A. Reinhold Denke.

The first competition resulted in the selection of the plans of Fredk. H. Meyer, J. W. Dolliver and A. Reinhold Denke, these three to compete for the final competition, which resulted as follows:

First prize—Fredk. H. Meyer, building and $750.

Second prize—J. W. Dolliver, $500.

Third prize—A. Reinhold Denke, $300.

The three prize plans are to be exhibited shortly. Yours very truly,

WILLIAM MOOSER,
Adviser for German House Association of San Francisco.

Los Angeles Opposed to Tall Buildings

After careful consideration of all arguments in favor of and against the question of changing the ordinance to allow the construction of a building higher than the 180-foot established limit, the Los Angeles city council has refused to accede to the request of Hulett C. Merritt that he be allowed to erect his proposed family monument. This refusal may be taken as clearing the situation somewhat, for it was the best test to which the public's opinion has been put in the matter of tall buildings for Los Angeles. The 150-foot maximum height of straight walls, with 30 feet additional for a mansard roof, may now be considered the height to which all structures must in the next few years, at least, conform. Plans for the Merritt skyscraper were being prepared by Architects Reid Bros. of San Francisco.

$10,000 Prize Design

"It may interest American architects to learn that the submission of plans for the construction of a presidential palace, on the Villanueva Station plot in the city of Habana, have been invited," writes Minister John B. Jackson, Habana. "Such plans will be received at the Department of Public Works up to 2 p. m. on April 15, 1911, and the competition is an open one, $10,000 being offered for the best design and $5,000 for the second. A circular has just been issued by the appropriate commission in which the general idea and special requirements are set forth, and this will no doubt eventually be published in the Gaceta Official. All interested should apply to Cuban Legation, Washington, D. C."

Los Angeles Engineers and Architects

The regular monthly meeting of the Engineers and Architects Association of Southern California was held December 6th at Hollenbeck cafe, President A. F. Rosenheim presiding. Following the dinner, the chief speaker was Mr. Edward Duryee, consulting chemical engineer, on "Improved Hydraulic Cement; Portlands Reground with Tufa." Mr. Lewis E. Aubury, state mineralogist, spoke briefly urging the engineers and architects to give greater encouragement to the use of California building materials, rehearsing the campaign the department has been making in this regard.

On motion of Mr. George W. Harding, amended by Mr. Charles Forman, Jr., the president was directed to appoint a committee to formulate a recommendation and ask the council to include in the building code a provision for the investigation and use of new materials. The San Francisco ordinance, which was cited as an example, reads as follows:

"Section 14. In cases in which it is claimed that any equally good or more desirable mode or manner of construction or materials, or device for fireproofing, other than specified in this ordinance can be used in the erection or alteration of buildings, the application to them for a permit to use the same shall have power to appoint a board of examiners consisting of not less than three nor more than five members, one of whom must be an architect, one a civil engineer and one a builder, each of whom shall have had at least ten (10) years' experience in San Francisco as an architect, civil engineer or builder, who shall take the usual oath of office. Said examiners shall adopt rules and specifications for examining and testing such mode or manner of construction, or material, or device for fireproofing, and furnish a copy of the same to the applicant. The said examiners shall thereupon notify such applicant to submit to such examination and to make tests in the presence of said examiners, or a majority thereof, according to such rules and specifications. All expenses of such examinations and such examiners and of tests shall be paid by the applicant, and said examiners may require security therefor.

"The said examiners shall after such examination and tests certify the results and their decision on the said application to the board of supervisors, who shall have power, in the event of the examination and tests being satisfactory, to grant a permit to the applicant in accordance with such decision of the said board of supervisors."

President Rosenheim announced that a definite date for the monthly meetings had been selected for the first Tuesday in each month, and the annual meeting in February.

A Scholarship in Architecture

A scholarship valued at $1,000 per year for advanced work in architecture has been made available to the trustees of the University of Illinois by Mr. Francis John Plym, of Niles, Michigan. The conditions under which this scholarship is to be bestowed will be determined by the trustees. For the present it is understood that it will be given each year to a graduate of the Department of Architecture for the purpose of foreign study and travel.

San Francisco Chapter, A. I. A.

By Sylvain Schnaittacher, Secretary.

An adjourned meeting of the San Francisco Chapter, A. I. A., was held at Tait's Cafe on Thursday evening, December 15th. The meeting was called to order by President Mooser.

The minutes of the meeting of November 17th and special meeting of November 29th were read and approved. Before proceeding to the regular order of business, Mr. Welsh made a few remarks on the necessity of the Chapter conducting its meetings in a parliamentary manner, so as to aid in the despatch of the business before it.

In the absence of Mr. James W. Reid, chairman of the Reception and Entertainment Committee, Mr. Mooser outlined the work that the committee had done in preparation for the entertainment of the delegates and visitors to the convention.

Mr. Schulze for the Committee on Commercial Bodies reported that while his committee had had no official meeting, yet there had been an informal conference of the members, and there had been some doubt expressed as to what the functions of the committee actually were. A discussion of this matter was postponed until the order of new business.

Mr. Welsh for the Publicity Committee read a report regarding conditions in San Francisco, and also a letter of inquiry which had been referred to the committee with reference to plans filed without the name of an architect attached. The report and letters were ordered received and placed on file.

Applications for membership from Messrs. William Garden Mitchell and William Otis Raiguel were read.

Communications were received from the California Building Law Association regarding the lien laws; from the New York Chapter regarding the law in New York concerning the selection of architects for public work; from the Merchants' Association regarding the use of redwood shingles; from the Philadelphia Chapter a copy of the minutes of the last meeting and a request for the interchange of minutes.

The next matter taken up was the report of the Legislative Committee, which submitted a typewritten draft of the proposed law. Mr. Joseph for the committee stated that it was the intention to send a copy to each member of the San Francisco Chapter, and that a copy had also been sent to the Los Angeles Chapter. After some discussion, it was duly moved, seconded and carried that Paragraph One be amended by striking out the words "and should the estimated cost of said building amount to $100,000 or more, such architect must be selected in open competition as hereinafter provided," also in Section 2, the words—"or should the estimated cost of said building amount to $100,000 or more," be stricken out. After further discussion of the various provisions of the bill, it was ordered referred back to the committee to report at the next meeting.

The president announced that the name of the committee on Fine Arts and City Adornment would be changed to "The Municipal Plan Committee," and that the name of Mr. Pissis would be added as a member of the committee.

On behalf of the Competition Committee, the chairman asked whether it was the sentiment of the chapter that a limit of cost should be placed on competitions considered by the committee. The committee was instructed to take cognizance of all competitions regardless of the limit of cost.

The next order of business was the consideration of the revised Constitution and By-laws, a copy of which had been sent to each member. On motion duly made, seconded and carried, Section 2, Article I, of the By-Laws was amended to read as follows:

"If, upon counting the letter ballots received, it is found that one or more in every fifteen cast are against the admission of any candidate; and provided that the number of adverse ballots exceeds three, he shall be declared rejected—otherwise he shall be duly declared a Chapter member. Any rejected candidate may make a new application after the expiration of one year."

Wants a Square Deal

State Mineralogist Lewis E. Aubury has sent to every board of trade, chamber of commerce, promotion board and commercial organizations of all description in California, having for their purpose the promotion of the welfare of California, a set of resolutions in favor of a square deal on the part of the Supervising Architect of the Treasury Department at Washington, when public buildings are to be constructed in this State by the Federal Government. The organizations have been appealed to by Aubury to put themselves on record, not only by the adoption of resolutions but also by an expression of their views. This will result in the greatest concerted action in behalf of California's home industries that has been taken to date.

This is connected with the work at Washington, which was begun with the writing of a letter to President Taft by Aubury and was followed up with letters addressed by Aubury to the individual members of the California Congressional delegation, in which they were requested to call upon the President in a body and talk to him concerning discrimination against California, a theme that has been attracting wide attention and that has al-

ready been made the subject of action by the Home Industry League of California, California Development Board and other influential organizations.

The Los Angeles Architectural Club

The Los Angeles Architectural Club held its regular December meeting in its new club rooms, 438½ S. Spring street, President Myron Hunt presiding. The meeting was the most interesting and helpful in the history of the organization and demonstrated the great possibilities for social and educational benefit to be derived by the club's constantly increasing membership.

The club is starting a library and would like to receive catalogues, books, magazines, sketches, statuary, reliefs, and other suitable material of this nature.

Announcements of the organization of a construction class have been sent out. This class will study under Mr. John Schulz as patron; already 32 applications for membership in this class have been received.

The club accepted the resignation of Mr. Otto Janssen as treasurer, Mr. Janssen having made plans to open an office in an interior city to practice architecture. Mr. H. T. Miller takes Mr. Janssen's place as chairman of the House Committee, the vacancy on the committee being filled by Mr. J. L. Delario.

The club received an indirect invitation through Mr. Wilbur David Cook, Jr., to assist the Housing Committee in working out a plan for a low-cost model sanitary house, and a committee was appointed to formulate a plan whereby a competition can be held by the club.

"This appeals to me as a very important thing" said President Hunt. "The work is charitable; if the city gives land and some one really responsible stands ready to build fifty houses on this land, it is appropriate for the club to do something. The committee should determine definite things, the form of house most practicable for this climate, the cost, the rules governing the competition, etc."

Mr. Schulz declared he did not believe a house could be built for the money contemplated unless it were constructed of concrete blocks, with timber roof trusses and frame partitions, but that such a construction would give ample latitude for architectural expression. Mr. A. S. Heineman thought the commission had in mind some sort of a poured-concrete house.

Messrs. Kelly, Schulz and Frauenfelder were appointed the members of the committee to find out what the housing commission proposes to do, get all necessary data and report to the governing board on the requirements.

Personal

Architects Wolfe & McKenzie of San Jose have dissolved partnership. Mr. Wolfe retains the firm's old suite in the Smoot building, while Mr. McKenzie has opened attractive offices in the Bank of San Jose building. Mr. McKenzie already has quite a little work on the boards, in fact both architects predict a splendid year in the building line in San Jose.

Architect F. E. Hurst, for ten years a practicing architect at Bisbee, Ariz., will locate at Phoenix after January 1st, where he has formed a partnership with L. G. Knipe, a structural engineer.

Architects Albert R. Walker and John T. Vawter, 216 Wright & Callender building, Los Angeles, have opened an office in San Diego, where they have quarters in Suite 10, Ingle building. Emmor B. Weaver is associated with them in the San Diego office.

Architect A. F. Rosenheim of Los Angeles has been appointed by Mayor Alexander a member of the Municipal Art Commission to fill the vacancy caused by the resignation of Architect John Parkinson.

D. H. Burnham on Town Planning Conference

In an interview with Mr. D. H. Burnham, of Chicago, printed in a London daily paper, he is reported as being most enthusiastic as to good that will be accomplished by the Town Planning Conference, just closed in London.

We read: "It is the greatest thing of the sort ever held," said Mr. Burnham. "There were present many great authorities on town planning, and the subject has been thrashed out thoroughly. The conference had the benefit of having various town planning schemes illustrated by drawings, which made their meaning quite clear. Germany was represented by drawings of a dozen of her greater cities, while America showed plans for the future development of Washington and Chicago, which plans have taken about four years to work out."

Mr. Burnham acted as presiding officer on one day of the conference and during the session read a paper on "The Development of the Cities of the Future."

Twenty Millions for New Buildings

Permits issued in San Francisco during 1910 show a total of $20,768,895 spent in building operations. This is within about $5,000,000 of the previous year's figure of $26,184,068. It indicates a very well sustained progress. More Class A and B buildings were erected or contracted for than during the previous year. Of Class C buildings there was a falling off of about 15 per cent. The number of frames, which represent homes and flats largely, is very little below the 1909 total.

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WELCOME

Welcome to the delegates who are attending the 44th Annual Meeting of the American Institute of Architects! San Francisco, California, and the Pacific Coast are glad to have you with them. See all there is to see—and there's a plenty—bask in our warm sunshine while your friends in the East shiver from the cold—partake of our bounties and return home to come again—perhaps only for a visit, perhaps to locate permanently—any way, come back for you are always Welcome!

ABOLISH CITY AND STATE ARCHITECTS

The time has come for the two California Chapters of the American Institute of Architects to make themselves felt in municipal and state affairs. With the new rules regulating competitions in force there is a growing tendency to encourage competitive work, particularly of a public nature. The plan of a City Architect is commendable but not as a measure of economy. In San Francisco, for instance, the office has proved a most expensive luxury. It has been a constant drain upon the city's finances and because of frequent changes in its personnel, it has lost its efficiency and usefulness. In spite of the fact that the department employs a corps of high salaried draftsmen, it has been found necessary to turn over some of the work to outsiders, paying them a commission of four per cent, and the City Architect supervising the construction. This plan may be all right for a few fortunate ones, but it is hardly a fair deal for those who haven't a "pull" with the administration and who might have a chance, if the work was subject to competition. It seems to us to be a mighty expensive policy for the municipality—this maintaining a department of City Architecture with a costly pay roll, and employing outside talent besides.

It might be advisable for cities to employ a Supervising Architect

but the actual preparation of plans and specifications should be left to the practicing members of the profession whose services should be retained by competition conducted according to the rules of the American Institute. The day of the City Architect has passed, and it's high time San Francisco was waking up to the fact.

ARGUMENTS IN FAVOR OF A WATER FRONT EXPOSITION

The opportunity for combining electrical displays on the water on visiting battleships and other vessels with those on land appear to be without limit. The effect of the exposition from Goat Island, from the ferry boats crossing the bay, from all directions in the day time and at night, would be wonderful and unequalled.

The coast-wise and ocean shipping would have increased and permanent wharfage after the exposition; and during the exposition and during the time of construction of same, existing shipping accommodations would remain undisturbed.

The view of arriving and departing vessels from the wharves fronting on the exposition and others south would add increased gaiety and stimulate interest in the exposition.

The cost of the exposition placed on the water front would be the same as it would be elsewhere but the assets after the Fair would be much greater.

The cost of transporting material to the water front exposition site would be much less than to any inland site, and the cost of removing the temporary buildings from the Fair site would be correspondingly less.

For the same cost a greater showing can be made by buildings covering a given area if these are spread out and having but one frontage than if grouped around a central court or in any other way.

The whole of the Pacific Coast states and bay cities are interested in the water front site, while only certain localities would be interested in an inland location.

Real estate in the business section and the whole of San Francisco would be enhanced in value permanently by the beautification and structural development of the water front, while a temporary boom within certain local limits would be comparatively the result of the selection of an inland or oceanwise site.

The accessibility of the water front would induce people from across the bay, as well as from the land side, to visit the exposition frequently every week instead of occasionally.

The climate on the water front is always much milder and less liable to cold, damp fogs than any other part of the city and the shelter of the hills and city to the west would make the exposition more popular and increase the gate receipts.

Why Build Sewers of Concrete?

The Brick Builder.

The Architect and Engineer, a journal generally supposed to be a cement organ, an advocate of reinforced concrete construction for all purposes, now urges greater conservatism in the use of that material, a warning that is as timely as it is unexpected, for fewer materials have been more over-rated, abused, than has concrete.

Says the journal editorially in its last issue:

"Unbiased engineers will agree that concrete construction is still in the experimental stage and that the constructions of the last decade have been done rather on a large scale without waiting in many instances for the outcome of proper tests, or studying the conditions to which the concrete structures had to be subjected. Since we know that concrete is destroyed, even by feeble acids and by alkaline solutions, why do engineers expose sewers, aqueducts and pipe lines to those corroding agents? * * * Water to be carried through aqueducts should be tested repeatedly, in order to find out if it carries carbonic acid in solution, which is sure to soften the concrete if present in noticeable amounts. Instead of doing this, millions of dollars are spent on that work with the result that the structures decay in the course of a few years and the construction in question becomes a disgrace to the cement industry. Is concrete to blame if it is thus used in the wrong place? * * *

HEATING AND LIGHTING

Plumbing and Electrical Work

Location of Direct Radiators*

By Frederick Nye.

IT MAY be reasonably assumed that there is a best position for a radiator to occupy in a room, and while the customer often decides where the radiator shall stand, we ought to consider that there is a best position from the heating engineer's point of view if he is at liberty to express his choice.

The position of radiators near a wall that has no windows, but at right angles to and near the wall which has the windows in it, I believe, will give better results than any other.

My attention was first called to it in a house in which I lived some years ago, one room in which was warmed more effectively than the others without any apparent reason. I need scarcely say that I went to all reasonable trouble in trying to find a cause—after once realizing that there was something that wanted accounting for—taking into consideration position of room, temperature of water in the radiator (as compared with the others), the area of radiation, and all that could be thought of or done, and was finally forced to believe the position of the radiator had something to do with it.

It was the only radiator in the house so situated, but there was another one in the same room of a little larger size, and next on the circuit to the one in question (but on the wall opposite the windows), and this would not heat the room so well I tried this several times, and the difference was so marked that it would in words, appear like an exaggeration.

I feel convinced that the position indicated is a good one and better than others. Whether one may be discovered that is still better I do not know, and I must confess to feeling weak in offering any good reason for radiators so situated doing better service in keeping up the temperature of rooms than if fixed in different spots. Perhaps discussion may enlighten us, but I personally can only suggest that it is because the radiator deals effectively with the window end of the room, where the chief of, almost all, the heat loss occurs.

I have not noticed that the position of the fireplace (with its air-extracting chimney) affects the good results, but I have noticed, sufficiently to feel tolerably certain, that if one of the radiators be turned at right angles, so that it stands flat against the window wall, the good effect is reduced to a marked degree.

I do not favor putting radiators under windows, for, apart from curtains and drapery affecting results, the warmed air having contact with cold glass, must lessen the degree of warmth the radiator can afford to the room. It is recognized, of course, that the chief work a radiator has to do is to counteract the cooling influence of windows (always assuming that the air entering a room comes from a warmed entrance way). The windows do not constitute the whole work the radiator has to deal with, but, in a residence with a heating apparatus reasonably well arranged, the windows represent the greatest cooling influence in any kind of living room.

A radiator affords the desired sense of comfort by warming the air, the radiant heat from it being a negligible quantity as regards the question now under discussion. The warmth may be said to come from it in the form of a broad and thick ribbon, or flat stream of warmed air, ascending vertically from the radiator, this stream going toward the ceiling where it curves over and spreads, and becomes diffused in all directions more or less. In any case the warmed air goes up a few feet before it does anything toward warming the body of the room, and while this action may be modified in the case of radiators having ventilators behind them, it still remains the general rule.

If, therefore, this flat stream of warmed air first travels up against glass for about five feet, the glass being the great cooling factor in the room, we may suppose that the heat loss due to this cause is made the greatest it can be. I have not had opportunity to test and ascertain the actual difference (if any) in the resulting warmth in a room warmed by a radiator under a window, and one not under a window, but I have been gradually forced to consider that there is a difference sufficient to warrant my practice in allowing (in my own specifications) 15 per cent more radiation than customary when radiators are to go under windows, even though they stand exposed and are not under window seats or window boards.

* Paper read before the Institution of Heating and Ventilating Engineers.

Business Methods of Plumbers

IN this age of hustle, the plumber, if he wishes to succeed, can not do so by waiting in his shop or office for business to come. The energetic business man will not sit around waiting for something to turn up, but will go out to solicit business wherever work is to be done. J. J. Cosgrove, in Modern Sanitation, states that his first aim should be to get his name on the mailing list of architects and general contractors, so that when they have anything in his line to estimate a card will be mailed to him notifying him of that fact. It is not an easy matter to get the entree to the best offices, and the plumber should not become discouraged with repeated failures, but stick to his purpose, determined to win out in the end. If the privilege of estimating on a certain architect's work is worth having it is worth waiting and fighting for.

The architect who has made a name for himself does not care to have irresponsible contractors estimating for him, and will not permit it, so that the young business man can not expect that privilege until he has been long enough established to prove his worth. He should call regularly, though, and make application at frequent intervals, for the very perseverance will finally have its effect. In calling on an architect do not request the privilege of figuring on "anything" he might have in your line, but learn beforehand of some work he has on the boards and then make a specific request to estimate on that work. Depend on it, if once the entree to the office is gained, it will not be withdrawn unless for cause. When all other means fail, it is sometimes a good stroke to secure a note from the owner of the building directing the architect to extend to you the privilege of figuring on that operation. Having by this means gained entrance to the office, your future success or failure there will depend much upon yourself.

It might be well to point out here the value of personal appearance in gaining entrance to an office. The man who is well groomed and prosperous looking will succeed in eluding the guard at the outer portal, where a more carelessly dressed person would be turned away. When you want the privilege of estimating on certain work, do not tell your wishes to the office boy who insolently asks your business, but state emphatically that you have business with his employer and want to see him personally. The office boy has no authority in the matter, but if he finds you simple enough to assume he has, will live up to the assumption and turn you down.

It is assumed that in submitting an estimate the plumber does so honestly, in all fairness, and without collusion or combination with other contractors. These introductory remarks might be out of place if it were not for the dishonest practice in some cities for a certain clique of contractors to combine, and, knowing they are the only ones estimating for a certain contractor or owner, decide among themselves who shall submit the lowest estimate, how much it shall be and what prices the remaining contractors shall offer to do the work for. Indeed, it was only a short time ago that the building committee for a large building refused to consider the bids submitted by plumbing contractors in their own town and went outside the city to secure a fair and reasonable estimate. In doing so they made public their reason, which did not reflect much credit on the honesty and fair dealing of the local plumbers. In reporting the matter the committee said:

> Having knowledge of the cost of the fixtures proposed to be used, and having carefully estimated the cost of setting the same and adding a reasonable profit on the entire contract, your committee was surprised upon opening the above bids to find that they materially exceeded our estimate. Upon investigation we were informed that a meeting of the above bidders had been held previous to handing in their bids, at which meeting, we are informed, it was decided who should be the lowest bidder; which low bidder was to furnish his figures to the other bidders, who were to present bids. This action seemed so reprehensible and savored so strongly of collusion that the committee rejected all bids and secured an estimate from a thoroughly reliable plumbing firm to furnish the fixtures and install the same at a considerable saving over the prices submitted by the combine.

Such a proceeding is not only reprehensible, but likewise it is a bad policy. Once such a combination is worked on an architect the doors of his office will thereafter be closed to all who entered into the combine, and the news of the attempt to hold up an architect by means of an unlawful combination will travel fast and will not impress those who learn of the business incapacity and lack of fair dealings of those in the ring. The way to succeed is to master thoroughly the details of the business and the practice of plumbing, then, secure in the strength of your position, refuse to enter into unfair combinations and carve out your business future by fair dealings, accurate estimating, close application to business and mastery of detail.

The contractor may gain a temporary advantage by combination with others to stifle competition, but in the end he will lose, and his wit not having been sharpened and his business methods improved by fair competition, he will fail in the end.

If for any reason—such, for instance, as too much work on hand that you can not handle more—you do not care to estimate on an operation, frankly tell the architect so. He will respect your fair dealings and keep your name on his estimating list, while otherwise he would

have to cross it off if he learned that for whatever reason, however innocent, you had submitted an estimate based on those submitted by others.

Fireproof Construction

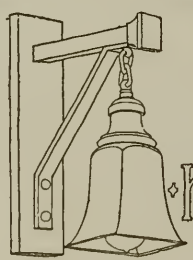
The Builder's Guide.

The Architect and Engineer, of California, in an editorial on the subject of Fireproof Construction presents some startling figures on the waste involved in the old-fashioned type of building construction. "To date, this half year," says Architect and Engineer, "we've done $514,000,000 worth of new buildings and repairs. That looks good and prosperous and progressive. It means approximately $1,000,000,000 worth of construction for the year. But look upon the reverse of the picture. If nothing extraordinary happens, no abnormal conflagration (the Baltimore and San Francisco fires were but two years apart) our year's fires will probably total up about 1,700 people burned, 165,000 buildings, $280,000,000 worth of property! The insurance companies recompense us in small part for this loss, but we pay them $3.00 in premiums for every dollar we get out of them, and then our fire departments, water supply and such items cost us $300,000,000 more, in fine, a net loss or cost of $564,000,000 for fire! If the billion dollars expended in new buildings means progress, this terrible loss represents retrogression, asinine folly, crass stupidity! In all the new building done this year only in 14 per cent of it has any effort at all been made at fireproofing, and of that 96 per cent of it is ineffective, abortive, in that in almost every case though some parts of the building were well done, some silly little thing was neglected that jeopardizes the whole structure."

That these "little things" in fireproofing are vital factors was evidenced here the other day in New York. A fire broke out unexpectedly in a room of one of the stateliest and most expensive buildings in that city. The contents of the room were completely destroyed. Thanks to the foresight of the architect in providing metallic trim and a metallic door the fire was unable to progress further. It burned itself out in that one room. But for this apparently trivial detail of metallic rim and door no man may predict what the result might have been! It pays to make buildings fireproof and in the fireproofing of buildings it pays to look to every detail. It not infrequently happens that some trifle overlooked or unconsidered is the loophole to disaster. A building, like a chain, is not stronger than its weakest part. To be fireproof a building must be wholly fireproof, not partially or approximately so.

Plumber's Interesting Discovery

Plumbing involves the public health, and there seems to be no reason why the requirements with regard to it should not be enforced. The Plumber and Steamfitter cites an instance of a man who rented a house and store in New York not long ago. He happened to be a plumber, and on taking possession naturally took a look at the plumbing in his new home. Here is what he found: The hot water pipe from the top of the range boiler was left hanging in the partition, while the pipe from the hot water tap in the sink was connected to the cold water tap in the adjoining house. The cold water pipe connected with the tap in the sink was found with an open tee in the partition behind the baseboard. All bathroom fixtures leaked, owing to loose couplings. The gas pipe was not carried



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to the meter, being left hidden in the partition.

This man may consider himself lucky that his gas meter was not connected with the water pipes. He was fortunate in being a renter and not a buyer.

The rapid expansion and growth of our cities is a source of civic pride, but it brings with it the temptation to build hastily rather than well.—Ex.

San Joaquin County Reservoir

Engineer Edwin Duryea, Jr., of the South San Joaquin Irrigation District, with headquarters in Stockton, is making surveys preparatory to the construction of a system to provide water for 70,000 acres. Long tunnels and conduits are to be built and at Eugene, a town located at he corners of San Joaquin, Calaveras, and Stanislaus counties, a big concrete reservoir is to be built.

Club Building for Columbia Park Boys

Mrs. Jas. C. Gordan, of 1998 Broadway, San Francisco, and widow of the real estate operator who died recently, is to erect a splendid home for the Columbia Park Boys' Club. An elaborate building is to be put up as soon as plans can be prepared.

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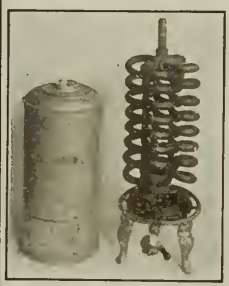

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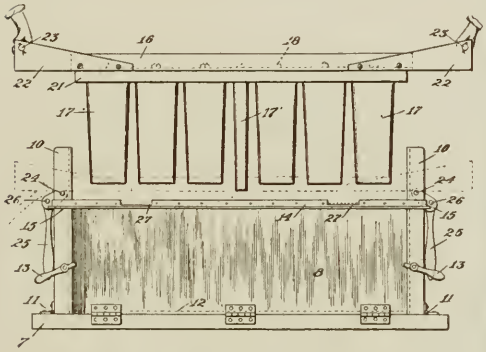
Recent Patents Relating to Building Construction

Material for this department is compiled expressly for the Architect and Engineer by Watson & Boyden, patent and trade-mark lawyers and solicitors, 918 F street, Washington, D. C., and to them all inquiries in regard to patents, trademarks, copyrights, etc., and litigation affecting the same should be addressed.

A complete printed copy of the specification and drawing of any United States patent in print will be sent, postpaid, to any address for ten cents.

977,025.



Frank D. Robbins, of Oakland, Cal.—Combined Mixer and Carrier.

977,679. Patented Dec. 6, 1910.

This invention seeks to provide a device for mixing and transporting concrete at the same time. It consists of a drum A supported on a shaft mounted on two large wheels like a push cart. In operation concrete making material is placed in the drum and then the handle 13 moved toward the bail 8 so as to bring the clutch members 5, 6, into co-operative relation. When the device is rolled along the drum A turns, thus tumbling the material and mixing the concrete. When sufficiently mixed the clutch is disengaged and the mixed batch may then be wheeled to the desired point.

Etta P. Frink and Drury A. Jones, of Fort Lupton, Colo.—Mold for Cement Blocks.

977,792. Patented Dec. 6, 1910.

The object of the invention is to provide a mold for cement blocks which

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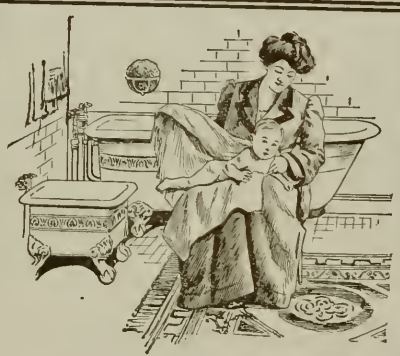

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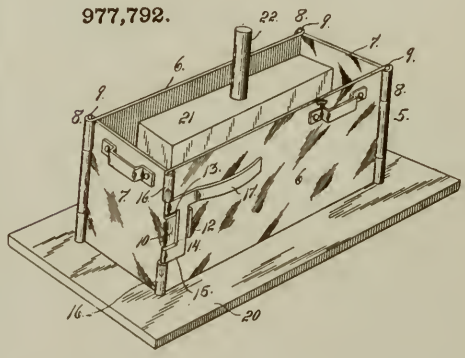
may be readily removed from the block while still in the soft state without injuring the same. To this end the four sides of the mold are hinged together at three corners, while the fourth is provided with a locking device 10, 12, 15, operated by means of a lever 17 pivoted at 16 to one of the sides. By swinging this lever outwardly the sides of the mold may be disconnected at this corner and readily removed from the block.

977,792.

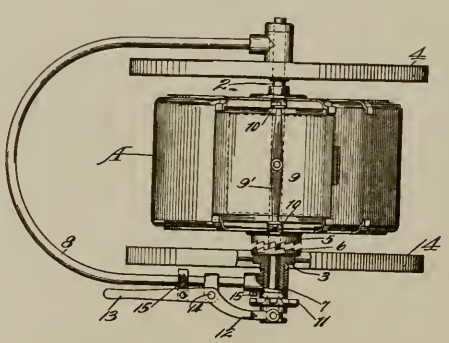


Peter Sass, of San Francisco, Cal.—Floor Surfacing and Polishing Machine.

978,654. Patented Dec. 13, 1910.

The purpose of this invention is to provide a machine universally adaptable to polish all kinds of floors whether of marble, tile, composition or wood, and which may be carefully and closely adjusted. The polishing rollers are represented at 25, and may be changed to suit the character of the surface being polished. These rollers are carried on a vertical rod 14, which may be accurately adjusted up and down by means of the hand wheel, 20. For a better understanding of this device those interested should obtain a copy of the complete patent.

977,679.



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When writing to Advertisers mention this Magazine.

By the Way

Some Industrial Information Worth the While

Victory for California Marble.

The Supervisors of Sacramento county have rendered a decision in favor of using California marble in the construction of the new courthouse for Sacramento county, notwithstanding that a contract had been awarded previously that permitted the use of Vermont marble in the structure.

The result was achieved after an exhaustive showing of facts and the presentation of the state law regarding the use of home materials wherever the same is practicable, which was made by W. W. Thayer, representing the State Mineralogist of California by A. C. Rulofson, second vice-president and D. J. Alberga, director of the Home Industry League of California and Joseph Anderson, president of the Home Products League of Sacramento valley.

When bids were received for construction of the courthouse it was provided that Skyros marble should be used. This is a product of Tuolumne county in this State and of no other part of the United States. When the fact appeared that Vermont marble would be used, State Mineralogist Aubury took a hand in having the facts known. He consulted with the Home Industry League of California and, on the showing that the California marble from Tuolumne county was fully the equal of that to be brought in from Vermont and was more durable, it was decided to make representations to the Sacramento county supervisors and try to induce them to give the California product the preference. The supervisors were told that it was inconsistent to ask the federal government to give California materials the preference in the construction of public buildings in this State if the county supervisors were to permit the use of outside materials in the construction of a county building. At a meeting in Sacramento Tuesday, last, the Supervisorial Board voted to have the California marble used and the victory was won, for which the State Mineralogist and the Home Industry Leagues of San Francisco and Sacramento had striven.

The action of the Board of Supervisors of Sacramento county has received the strong commendation of the Home Industry Leagues and will receive the sanction of all classes of citizens who are interested in upbuilding the industries of California by all legitimate means.

The contract for the marble amounts to about $60,000.

Wells & Spencer to Handle Western Elevators

With the first of the year the Northern California business of the Western Elevator Company was taken over by the Wells & Spencer Machine Company, Frank M. Spencer, sole owner, and in the future Mr. Spencer will do all the figuring and superintend the inspection and repair work of Western elevator installations in San Francisco and vicinity. It is understood that Ed. Wey-

Southern Pacific Co.'s New Depot, Tulare, Cal. D. J. Patterson, Architect

THIS cut shows the new depot now being built at Tulare and which is being faced with **"Golden Gate Sandstone" Brick** made of sand and lime at our **Antioch** factory. We also sold the Del Monte (white Monterey) sand, red brick and crushed rock for this building. ***Do you ever buy sand, rock or gravel in car load lots?*** If you need any sand, rock or gravel for any interior points such as Tulare, Fresno, Sacramento, Richmond, etc., let us quote you and submit samples, for we can not only ship from our Antioch pit but we are able to supply you from a pit in the San Joaquin Valley as well as a convenient point in the Sacramento Valley.
GOLDEN GATE BRICK CO., C. F. PRATT, Manager, **660 Market St.,** Opposite Palace Hotel.

mouth, who has been San Francisco manager of the Western company the past two years, will go to Portland.

The Wells & Spencer company is well known and has the confidence of leading architects and contractors. In the last five years the company has installed its own machines in some of the largest buildings in San Francisco. Passenger and freight elevators are included in the list in addition to a great many dumb waiters. Much repair work has also been performed. Taking the agency of the Western will in no way interfere with the general installation and repair work of the Wells & Spencer company, further than that it may necessitate larger quarters and the employment of more mechanics. Mr. Spencer, who is now the head of the company, was for seventeen years with the Cahill & Hall Elevator Company.

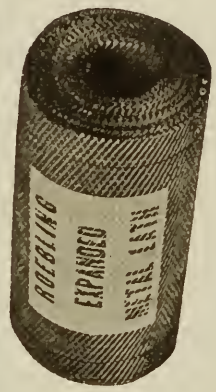
Among the San Francisco buildings equipped with Western elevators are the Newman & Levinson building, which has three fast-running electric passenger cars, the Union Trust building, and the Locomobile garage.

Hart Heater Company Warming Many Houses.

The Hart Heater Company, of Oakland, Cal., is now doing a very large business in the house heating line by hot water. A large heater called the "Special No. 1" is made by the company for this purpose. It is set up in the basement of residences with asbestos covered pipes connecting hot water radiators in any part of the house and the results have proven absolutely satisfactory in the high degree of warmth obtained, quickly and economically.

The company has also perfected a gasoline burner, which is said to be a revelation in its line. It can be set up in any part of the house without the slightest danger, and the heat efficiency of the burner is truly remarkable. This will prove an immense factor in the sale of heaters in places heretofore not visited

THE ROEBLING CONSTRUCTION Co's



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on account of no gas or other fuel to operate same, in fact a larger business can be done in places now using gas, as the saving must be very apparent in burning gasoline at 17c per gallon, one gallon lasting, on tests made, over four hours steady burning. The patent burner of this company (which is also used with the gasoline outfit) consumes but 70 feet of artificial gas per hour.

The heater and combination boiler demand has been very large, particularly from interior cities of the State, and shipments by the company have been made to Canada and but recently a call for one was filled from far away London, England.

Why Architects Should Specify the Redwood Shingle

In this issue of The Architect and Engineer appears the initial advertisement of the Redwood Shingle Association, which is selling agent of a large number of the redwood shingle mills of Humboldt county. It is through the efforts of this association that the old custom of packing shingles in California thousands has been abandoned, and from now on the association will offer to the consumer redwood shingles packed in full thousands.

It is also the purpose of the association to so brand the shingles manufactured and marketed by them, that the architect and builder can, at all times, be sure of the quality of the shingle purchased, by specifying this brand.

The redwood shingle should be popular with home-builders on account of its fire-resisting quality, together with its lasting qualities when properly laid upon the roofs and sides of the building.

Some objections have been made to the redwood shingle on account of the nails rusting, which permits the shingle to blow off the roof during wind-storms. This is easily overcome when galvanized nails are used.

There are many other advantages which the redwood shingle offers, which will be dwelt upon from time to time by this publication. As this is a splendid California product, there is no reason why the California redwood shingle should not meet with favor by the home-builders of California.

A "Bungalow" Hot Water Heater

Alive to the demands and requirements of the day, the Pittsburg Water Heater Company, through its Pacific Coast distributors, Joseph Thieben & Company of San Francisco, has placed upon the market an automatic gas water heater that is intended for bungalows and apartments where space is limited. The "bungalow heater," as it has been appropriately termed, occupies very little space, being but a miniature of the big domestic heater heretofore in use. While smaller than the regular size, it will furnish a copious supply of pure, hot water quite as speedily as any other size boiler. The hot water is ready at the turn of the faucet.

There is no waste of gas, the turn of the faucet that shuts off the water also shuts off the gas.

The patented "graduated" valve graduates the flow of gas to the flow of water, keeping the latter always hot, but not too hot.

With artificial gas at $1.00 per thousand cubic feet the "Bungalow" will supply ten gallons of hot water for a penny's worth of gas—a generous hot bath for two cents.

The cost of burning the small pilot light is only 20 cents a month.

It is guaranteed for one year to be free from defects in workmanship and materials.

The price of the heater is so low, compared with its durability and convenience, that you will never do without it, once in your service.

It will be installed in your house for a 30-day trial, and removed if you are not satisfied—all without costing you a cent.

Buildings as They Should Be

The Dahlstrom Metallic Door Company has issued a brochure under the title of "Buildings As They Should Be." It is an illustrative exposition of the advantages of Dahlstrom doors and trim.

Make inquiry ANYWHERE as to the reputation of **BLUXOME & CO.,** 532 Monadnock Building, San Francisco, for high class workmanship and fair dealing in plain or Reinforced Concrete Construction.

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The illustrations of interiors show the beautiful results obtainable with this steel material, and the perfection that has been reached in enameled and artistic finishing which enables the representation of woodwork of all classes. Knowing the quality of the material, it is not in the least surprising to see collected together a large group of prominent buildings all equipped with Dahlstrom metallic doors and trim. If any of our readers have not as yet received a copy of this booklet, they can obtain one promptly by addressing the Dahlstrom Metallic Door Company, Merchants' Exchange building, San Francisco.

Golden Gate Brick Company's Annual Calendar

For a number of years the Golden Gate Brick Company of San Francisco, has distributed to its customers and friends a very handsome calendar. Manager Pratt has been particularly successful in his selection of a reproduction of some famous painting, and this year it is "The Belle of New York," from an original pastel by Hamilton King. This clever artist is probably the best known painter of ideal heads in the world today. Mr. King is an American by birth, but has spent much time abroad studying in the art schools of the Old World. The color scheme of "The Belle of New York" calendar is exquisite and if we were asked to name the picture we would say most emphatically that "She's a Western girl."

The Golden Gate Brick Company has enjoyed an exceedingly prosperous year the past twelve months and the management looks for the business to double in 1911. The selling staff has been materially strengthened by the appointment of Mr. L. H. Pratt to the position of sales manager. Mr. Pratt was formerly with the Hanford Lumber Company and the Tuolumne Company of Modesto, and is a brother of the manager of the Golden Gate Brick Company.

Blanc's 1910 Year Book

It is really a one hundred page magazine with beautiful half-tone illustrations, made from photographs—most of which were taken by special permission of the architects, to particularly display the work illustrated—not merely a facade.

Some of these photographs were taken by the Misses Johnston & Hewitt of New York—the official photographers of the New Theatre Company; some by Lindenmuth, a diplome of the Chase Art School, who won several prizes, among them a gold medal at St. Louis.

The object of the Year Book, of course, is to sell "Blanc"—but its aim is more than that—it aims to give a man full information concerning "Blanc," its origin—its ambition—and to tell you how to do

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any particular kind of work with it, and then to show you not only where it is so used—but by whom, and then—its real aim—the creating of an artistic desire, and the giving of the means of how to accomplish it to suit man's taste.

"Such a book," writes the general manager of the company, "has never been attempted before. And if it is not worth $1.00, it is not worth the postage."

The company's greetings appear in the two color section of this magazine.

Parker-Preston Agencies

The Parker-Preston waterproof paints are now handled in California by the Boyd & Moore Company of San Francisco and the Richard Arenz Company of Los Angeles. Large and complete stocks of shingle stains and other waterproof paint specialties are carried by both of these well-known California houses, which is ample assurance of prompt and satisfactory deliveries.

Big Fruit Warehouse

The stockholders of the Paradise Fruit Growers' Union, of Paradise, Butte county, Cal., at their annual meeting voted to erect a large warehouse, which will include packing room, store room, office, stockholders and directors' rooms. The ground on which to erect the building and all money necessary are available. C. M. Burkett is president of the Union, and W. S. Clark is treasurer.

Bids Wanted for Water Pipe

The Vallejo Board of Public Works is advertising for proposals for furnishing pipe and fittings to be used in extending the water system from Fleming Hill to Vallejo. There will be 1,120 lengths of 12-inch cast iron bell and spigot pipe, 12 feet long and one-sixty-sixth of an inch in thickness; also 340 lengths of 8-inch pipe, 12 feet long and .51 of an inch thick. All pipe is to stand a pressure of 150 pounds to the square inch. Bids are to be opened January 23d.

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The Foote Concrete Mixer at Work

"Every Foote a Mixer"

Coast Representative Edward R. Bacon of the Foote Concrete Machinery Company, with headquarters in the Monadnock building, San Francisco, reports that Foote mixers are at present in use by the following well-known contractors:

Clark & Henery Construction Company, Sacramento, Cal., four mixers.

Healy-Tibbitts Construction Company, San Francisco, Cal, two mixers.

Barber Asphalt Paving Company, Oakland, Cal.

Piedmont Construction Company, Oakland, Cal.

Mr. F. H. Barnes, San Francisco, Cal.

Medford Cement & Paving Company, Medford, Ore.

All of the above mixers are equipped with improved power loading skip and automatic water tank, features of great economy.

Mr. Bacon is also agent for the Briggs Concrete Spreader Carts and Hotchkiss Metal Sidewalk Forms.

Complete catalogues and information will be cheerfully furnished upon request.

Chicago Mixers Sent Abroad

The Lansing Wheelbarrow Company, of 787 Folsom street, San Francisco, recently boxed for shipment on the steamer "Maitai," a 20-foot size Chicago Improved Cube Concrete Mixer, equipped with Ideal gasoline engine, for Melbourne, Australia.

During this season they have also shipped this make of concrete machine to Siberia, and to Manila.

THE ORIGINAL

BAY STATE BRICK AND CEMENT COATING

is a perfect coating for concrete, stucco or brick. It will protect concrete, brick or stucco against disintegration or hair cracking from moisture, give it any shade desired, can be used as a finishing coat instead of plaster on concrete walls, is applicable also to interior woodwork and for interior decoration, has been endorsed by the National Board of Fire Underwriters as a fire retarder and will therefore lessen your insurance rate. It does not destroy the distinctive texture of concrete. Will not drop off when applied above delicate machinery.

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Splendid Home of Pioneer Paper Company

The Pioneer Paper Company, makers of the well known Pioneer roll paper, has recently moved into its new home—a five-floor and basement building at 247 to 251 South Los Angeles street, Los Angeles, Cal. The structure is of reinforced concrete and steel, completely fireproofed throughout.

The building was designed and constructed especially to meet the requirements of the Pioneer Paper Company. It is located in the heart of the wholesale district, fronting 75 feet on Los Angeles street, with a depth of 131 feet.

Two elevators have been installed, also an automatic "Lowerator." The lowerator is for carrying heavy boxes and packages from the upper floors to the shipping room on the first floor. This it does with the greatest ease.

The basement, which is well lighted, has a 10-foot ceiling, and is used for storing heavy wrapping papers and paper bags.

A modern sprinkling system has been provided on every floor. This system is sufficient to flood the entire floor in a few minutes' time, and materially reduces the rate of insurance.

The ground floor of the building is subdivided into three sections the long way of the building. On the right is the general office, and those of the officers of the company. In the center is the main salesroom, provided with desks and counters.

At the left are the shipping rooms, receiving and forwarding departments.

Besides the regular telephone exchange, a private telephone system connects all floors and departments.

In the rear of the main office is the directors' room, fitted up in the most approved manner.

The development and growth of the establishment, during the past 20 years, has been parallel with that of the city. Starting in a small way, the Pioneer Paper Company manufactured ready roofings and sold them locally.

The business gradually extended, until today Pioneer Roofing is known and sold in all the states west of the Rocky Mountains.

Pioneer Roofing is made both in smooth and sanded surfaces, in several weights, for the various classes of buildings—from outhouses to business blocks. The leading brands of Pioneer Roofing are "Rubber Sanded," "Rubber Flaxine," "Ready Rock," "Specification" and "Silveroid." The latter is especially adapted for bungalows and other residences.

The officers of the company are: W. G. Hunt, president; C. L. Gifford, vice-president; H. M. Eichelberger, secretary and treasurer. Associated with the company are capable department managers and specialists in various lines.

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Excellent Trade Catalogue

One of the most handsome and complete trade catalogues ever issued on the Pacific Coast has recently been published by W. P. Fuller & Co., the well-known dealers in paints, oils and glass. For thoroughness and completeness, and excellence of typography it stands out by itself. Just how well the catalogue is being received is indicated by the following criticism taken from the London Decorator of October 22d. There is little we can add to this enthusiastic review:

"It is rarely that we review under the head of 'Publications Received' a trade catalogue, but the work before us is so truly worthy of praise that it fully deserves to be ranked as a standard work of its kind. One hesitates at all times to speak of anything as being 'the best,' but the writer can say that during his twenty-five years' connection with the paint trade he has never seen a better catalogue, nor one which was more truly worthy of the very highest praise.

"Before giving an idea of the contents of the book one or two special features may be mentioned, and English manufacturers might well follow out some of the ideas. It measures 7 inches by 9 inches. It is bound in a very serviceable buckram. The first special feature is that it consists of separate sheets or leaves all securely screwed together, and made so as to fold back easily. The idea is this. When there is a change of any kind in connection with any of the products included in the catalogue a new sheet is sent to each customer with a request that he will kindly withdraw the old sheet and place the new one in its stead. This solves the problem of constantly reprinting expensive catalogues, and it is an admirable idea. The leaf is easily removed by unscrewing the whole book and placing the leaf in its position, then screwing up again. In passing it may be mentioned that this single leaf idea is one which is certain to be followed largely in the future, not only in trade catalogues,

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but in general literature. We understand, for example, that in the United States a valuable encyclopaedia is published, or is about to be published, in which the same principle will be followed. Even the best encyclopaedia is soon rendered obsolete in certain of its parts, particularly in technical matters. On the other hand, the greater part of the book may be still quite up-to-date. It is a simple matter to arrange to reprint those articles which become out of date, send to each subscriber a new sheet which substitutes the old.

"Returning to Messrs Fuller's catalogue. We like their 'foreword' to their customers, which is to the effect that the prices in the book are all subject to discounts, and that the discounts can be learned on application to them. The book can therefore be handed to customers and the prices be read by them. The catalogue consists of no less than 381 pages beautifully printed on art paper, and it contains no less than 43 sheets of color samples which are prepared in a manner that leaves nothing to be desired, most of them having stuck down upon them 27 different samples, so that there are considerably over 1,000 separate color samples in the book. Then there are reproductions in color of a very large number of different cans and packages sent out by the firm, so that one knows precisely the appearance they present. There are several hundred of these. Full illustrations done in three-color process by photography, and full tables of glass are included. The index is very exhaustive, and is divided into sections, each section being easily arrived at by a portion of the margin being cut away as in the case of the index to ordinary ledgers.

"Running over the catalogue, we find many articles unfamiliar to English readers. There are various specialties, such as 'rubber' paint, etc. 'Twenty-five Cent' paint strikes one as rather happy, because it indicates something at a glance which means that 25 cents pays for a can of any color, and very beautiful some of the colors are, too. 'Rubber Cement Floor and Step' paint, 'Shingle Stains,' the shingles, of course, being wooden slabs which take the place in America of slates of wood buildings, and are usually stained more or less with brilliant colors. There are exactly the same things as frequently found at home on bungalows at the seaside. 'Barn and Roof' paint is another specialty, while 'Concreta' is a damp-proof coating for the surface of concrete or brick. 'Machinery' paint or 'Barrell' paint may also be mentioned. Japanese oil stains, carriage colors, mortar and cement colors, and so on.

"One need not speak of the samples of pure colors in oil or of the usual features which are found in English catalogues. What the catalogue cost to produce per copy is a thought which will occur to any practical man; it must be a very large sum, indeed. If any of our readers are interested, they can see the catalogue on calling at this office. It is well worth examining."

To Build Large Dam

It is reported that Wm. Ham Hall, Postal Telegraph building, San Francisco, and the Guggenheim interests are interested in a big irrigation project which includes the construction of a concrete dam 200 feet high across the Tuolumne river below Jacksonville. Surveys are now being made.

Fresno Building Boom

In addition to the erection of two large hotels, costing over $200,000 each, Fresno will have at least three new substantial office buildings this year.

Among the large buildings to be erected will be an eight story structure at the corner of J and Mariposa streets on the site of the Fiske building. The Fresno Estate Company, which owns this property, is now negotiating for the new structure and it is expected that plans will be drawn at a very early date. The building when completed will cost $350,000. It is to be used as an office building.

Scarcely more than half a block from this there is to be erected a six story office building by C. R. Puckhaber and associates to cost $250,000. The site of this building was only recently purchased for $70,000 and at the time of the transfer it was announced that building would start immediately.

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When writing to Advertisers mention this Magazine.

San Francisco Architectural Club Notes

At the last meeting of the Board of Directors of the San Francisco Architectural Club, the subject of further extending the quarters came up for consideration.

It was reported that the present quarters are inadequate to satisfactorily carry on the active student work of the Club.

The present Atelier is over-crowded. There are forty members in this class and further demands for working space from the ranks of present club members, who can not be accommodated.

In addition to the Class in Design, the Class in Steel Construction (fifty in number), demands better facilities for carrying on its work.

It is proposed to begin a Class in Architectural History, also a Life Class, if all arrangements can be made.

Figuring on the basis of present income and necessary outlay, the Board of Directors sees the need for exercising special care in matters of economy. At the same time, it realizes that the Club's student work must be adequately provided for.

It has, therefore, been decided to urge every club member to use his friendly influence by bringing one "Good Fellow" into the Club; in that way, the Club will be able to provide the funds necessary to enable it to acquire the large room to the north of the present quarters. This room will then be converted into a splendid Atelier, and the classes in Construction, History, and Life will carry on their work conveniently and without further interference.

To Erect Big Power Plant

The Northern California Power Co., with headquarters at Corning, Tehama county, will start construction before next March on a big power plant. A power line 100 miles long will be strung from the Coleman power house on Battle creek, Shasta county, to the headgate of the Sacramento Valley Irrigation Company's system two miles north of Hamilton City, Glenn county. This is to furnish 800 horsepower for four great pumps that are to lift water from the Sacramento river into the canal. The new line will cost $200,000. The heavy copper cables will be strung on reinforced concrete poles 50 feet high, with steel cross arms. These poles will be set in concrete and will be 16 inches in diameter at the bottom and five inches at the top and will weigh 3,800 pounds each. There will be 1,200 of these poles. H. A. Tedford is superintendent of construction, with headquarters in Corning.

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The cut shown above is the basement of a garage at Harrisburg, Pa., where they had already tried three systems of waterproofing, which had to be taken out and the work eventually done with "Master Builder's Filler." This work is quite the wonder of the East and people have come from as far as Boston to note the results.

There is nothing intricate about the application of the mineral as it can be mixed and laid by anybody who can handle a shovel. It is largely used in the construction of brewery and dairy floors and is unaffected by either acids or oil. The cost of Master Builders' Filler is within the reach of all.

A postal card will bring a representative or detailed information wherever you may be.

Santa Clara College Work Delayed

The awarding of the contract for the Administration building at Santa Clara college has been temporarily delayed by the death of Rev. Father Gollor. The latter is to be succeeded by Rev. J. A. Rockcliff of Spokane.

Many Contracts for the C. J. Hillard Company

The C. J. Hillard Company of San Francisco is one of the largest firms of its kind about the bay. It was organized about eight months ago when Mr. Hillard took over the old Bell & Phister Company. Since then the shops have been thoroughly renovated and the latest modern machinery has been installed.

Mr. Hillard is well known in San Francisco, having been connected with three local iron works since the fire (1906). Before starting in business Mr. Hillard was superintendent of the Brode Iron Works and was also with Dyer Brothers and the Rudgear Merle Company.

Since taking over the business of Messrs. Bell & Phister, the company has completed the following buildings: Keystone apartment house, Edward T. Foulkes, architect; Burns Hamman baths, Smith O'Brien, architect; Reno courthouse, Nevada, F. De Lonchant, architect; Redlick building, Bakersfield; Burnett school, Eagle apartment house, Hessman building, Oakland; the Empress theatre, and the Bartlett building.

At the present time the company is working on the following contracts: Biber Estate, Deere Implement Company building, St. Francis Realty Company building, Redlick building, Bakersfield; Bull Estate building and the Herzstein building. This is in addition to executing some very artistic Marquese work.

The C. J. Hillard Company is in the market for all kinds of ornamental iron and artistic metal work and is well equipped for handling brass and bronze bank fixtures, railings, etc.

Among the contracts for bank screens recently completed are with the Citizens National Bank and the City Abstract Co.

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(See letter below.)

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December 19th, 1910.

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THE ART IN ARCHITECTURE

Artistic merit in Architecture depends to a certain extent upon color. On account of the importance of this factor, too much care cannot be exercised in attaining desired tones.

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White enamel work has a peculiar charm and richness. Our Satinette White Enamel proves its superiority wherever it is used on church, residence, office building and public institution. It does not turn yellow, it is easily cleaned and does not crack. It may be finished with a dull, flat effect or rich gloss. Satinette Undercoat should always be used for priming and undercoats for Satinette White Enamel work.

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Municipal Art Commission

The establishment of a municipal commission to develop a general plan of municipal betterment along practical and economic lines has been indorsed by the San Francisco Chapter of the American Institute of Architects.

It was pointed out in the preamble of the resolution passed by the chapter that many cities in the East and in Europe have established these commissions. It was added that there are being carried out in San Francisco under various official bodies many improvements which are being undertaken without any general plan.

The San Francisco architects have expressed in a resolution a suggestion to the mayor and the board of supervisors that they take under consideration the advisability of creating a municipal commission to bring about general harmony, and that the state board of harbor commissioners, the board of park commissioners and the secretary of war be asked to co-operate.

The mayor was further asked to call a convention for the discussion of this topic at an early date. The chapter also resolved that inasmuch as great benefit would come from a combined effort of improvement, the construction of a new city hall be deferred until the commission had been formed.

William Mooser, president of the local chapter, presided at the meeting. The committee reporting the resolution consists of Willis Polk, Albert Pissis, J. Galen Howard, Smith O'Brien, C. P. Weeks, John Bakewell, Jr., Arthur Brown, Jr., Ernest Coxhead and W. B. Faville.

Cold Facts

The Triumph Ice Machine Company of Cincinnati, Ohio, has established a Coast agency with headquarters at San Francisco, the H. F. Lyon Company having been appointed Coast agents.

The Triumph company is one of the largest concerns in the United States, in its line, and has branch offices at Dallas, Texas, New Orleans, Philadelphia, Kansas City, New York, Boston and Seattle.

The company makes a specialty of refrigerating and ice making plants, including ice water plants for banks, schoolhouses and other public buildings which require ice-water and distilled water.

The Lyon company is also agent for the Keeler water-tube and tubular boilers for heating plants, and for the Trenton Engine Company's "Reeve's Compound and Simple Steam Engines" for electric lighting plants.

The Lyon company is at 581 Monadnock Building, San Francisco.

Interior of Banking Room, London Paris National Bank, San Francisco
Albert Pissis Architect

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